

# SOAP

## SANITARY CHEMICALS

*Call D & O...*

*first for Service*

Even the exigencies of these troubled times have not interrupted our efforts to render all our valued customers the kind of service and cooperation they have so well enjoyed in the past. Good service is still an important policy here at D & O... just as it has been for over 144 years.



*Dodge & Olcott Company*

180 VARICK STREET • NEW YORK, N. Y.  
BOSTON • CHICAGO • PHILADELPHIA • ST. LOUIS • LOS ANGELES  
Plant and Laboratories, Bayonne, N. J.

*August 1943*

STANDARD  
SODIUM  
METASILICATE

DIAMOND  
58% LIGHT  
SODA ASH

DIAMOND  
58%  
LIGHT FLUFFY  
SODA ASH

DIAMOND  
SODA  
CRYSTALS

DIAMOND  
76% CAUSTIC  
SODA  
(SOLID AND FLAKE)

DIAMOND  
LIQUID  
CAUSTIC SODA

STANDARD  
LIQUID SILICATE  
OF SODA  
(ALL GRADES)

STANDARD  
WATER WHITE  
GRADE 42

STANDARD  
SILICATE  
OF SODA  
GLASS

STANDARD  
SILICATED  
ALKALIES

*Silicates  
of Soda*  
**ARE VITAL TO OUR  
WAR PROGRAM!**

AVOID DISAPPOINTMENT, AND PROCES-  
SING DELAYS IN YOUR PLANT BY  
ANTICIPATING YOUR REQUIREMENTS  
WELL IN ADVANCE OF DELIVERY NEEDS



**DIAMOND ALKALI COMPANY**

PITTSBURGH, PA., and EVERYWHERE



# Your Outlook



if we don't win the war

Think of THIS picture of the future whenever you are tempted to gripe about the present. Priorities, rationing, certifications and super-taxation are downright pleasant — compared with what our prospects would be without them. It's our double duty to keep you sup-

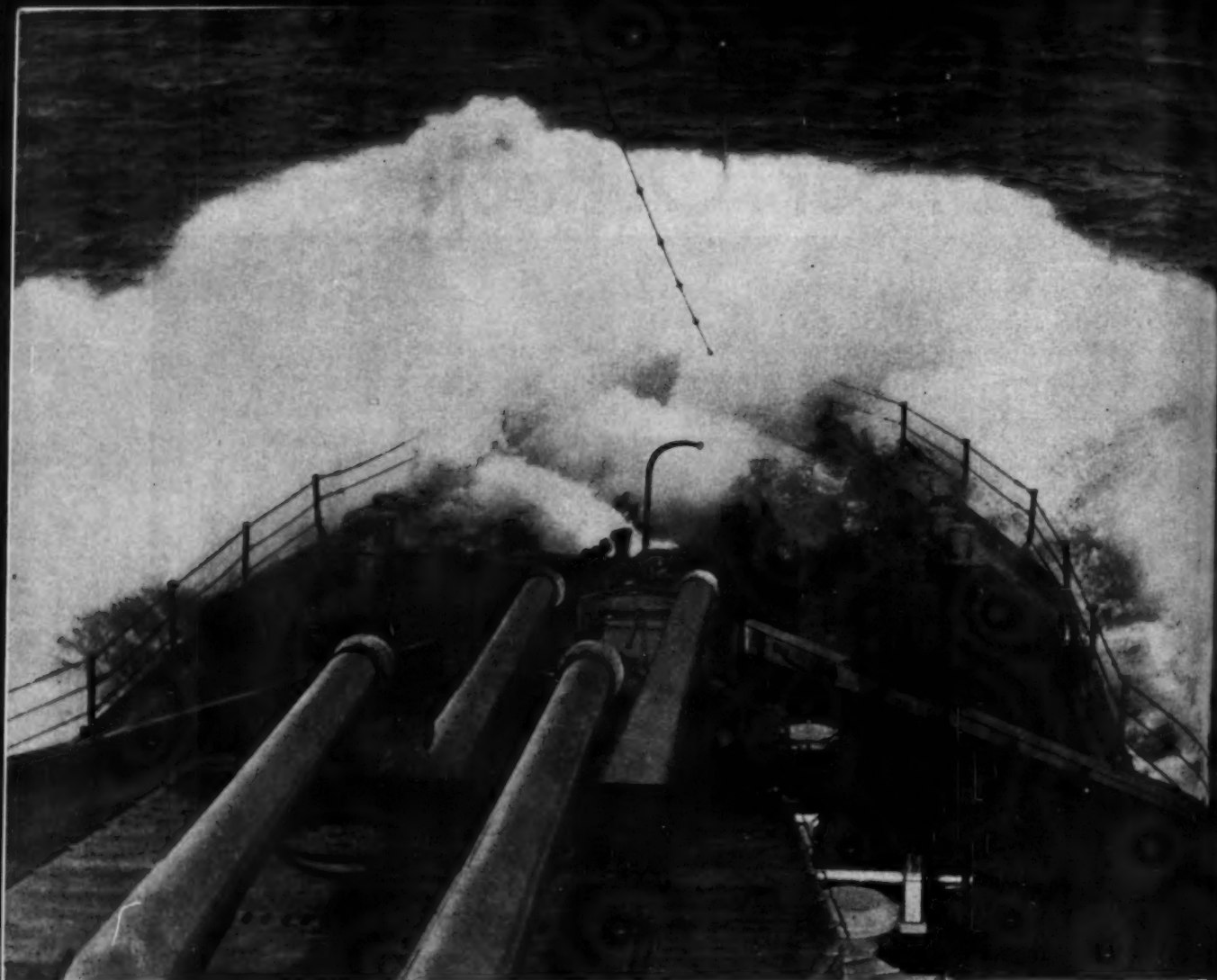
plied with sanitary chemicals and maintenance material while we go all-out for Victory. We're proud of the job we're doing for our country — and for our jobbers. Write for a set of our Victory Service Bulletins.

FULD SELLS JOBBERS ONLY! FULD MAKES IT FOR THE LEADERS!

# Fuld Brothers

702 South Wolfe Street, Baltimore, Maryland  
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Liquid Soaps, Floor Seals, Floor Treatments, Deodorant Blocks, Liquid Deodorants, Plumbing Specialties, Special Cleaners, Self-Polishing Waxes, Powdered Waxes, Oil Soaps, Liquid Cleaners, Disinfectants, Insecticides, Metal Polishes, Furniture Polishes, Deodorant Block Holders, Soap Dispensers.



## FULL SPEED *Ahead*

**V**ICTORY for our Country depends upon all of us who are supplying our Government with its vital needs.

Just now we are plowing ahead to win the war. Let us not lose sight of the fact, however, that a healthy industry behind the war effort will insure the final Victory.

Maximum production by a healthy industry will win the war and insure the successful solution of the many problems which will come after the war.

*Products which are available to the perfumer at reasonable prices:*

OIL OF WHITE CEDAR  
OIL OF CEDAR LEAF AMERICAN  
Exceptionally Fine Quality  
OIL OF BALSAM FIR AMERICAN  
PHENYL ETHYL ALCOHOL

IONONE A. B.—IONONE METHYL  
HYDRATROPIC ALDEHYDE  
PARA METHYL HYDRATROPIC ALDEHYDE  
CYCLAMAL  
INDOL

*Requests for samples on your firm's letterhead and further information will be promptly furnished.*



*Aromatics Division*  
**GENERAL DRUG COMPANY**

644 Pacific St., Brooklyn, N. Y.

9 S. CLINTON STREET, CHICAGO

1019 ELLIOTT STREET, W. WINDSOR, ONT.

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# SOAP

*and*

## SANITARY CHEMICALS

Reg. U. S. Pat. Office

AUGUST  
1943

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# GEORGE LUEDERS & CO.

INTEGRITY      SINCE      RELIABILITY  
**1885**

## RESINS

PRODUCED AT OUR FACTORY  
IN BROOKLYN, N. Y.



BALSAM PERU  
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CHICAGO • SAN FRANCISCO • MONTREAL

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## WHY IT'S WISE TO THINK ABOUT POST-WAR PACKAGING NOW!

**W**AR BROUGHT the need for many packaging short cuts.

Substitutes and changes have lowered the cost and in not a few instances have increased the utility of many well-known packages.

Such have been the results of Ritchie's experience making vast quantities of special packages for war needs.

We have designed new machinery, developed new methods, and in some cases new materials. Our facilities, and those of other leading package manufacturers, have been taxed to the utmost.

Our plans are formed already for making these advantages and economies available to private business as quickly as time and the lightening of war needs permit. We venture

the opinion that there will be a great swing to re-styled packaging in the post-war period. More practical packages. Conserving materials—and cost. Available manufacturing facilities may prove inadequate to fill the large backlog of accumulating needs.

It's not too early to be thinking about the new packages *you* will require for those new, war-developed products of your own. Not too early to think about re-styling and economizing *present* packages.

Ritchie packaging engineers and designers will be glad to help you—*now*. Their services are available without cost, without obligation and without thought of gaining immediate business. Start planning for tomorrow's needs —today—with Ritchie.

**W. C. *Ritchie* AND COMPANY**

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SET-UP PAPER BOXES  
FIBRE CANS  
TRANSPARENT PACKAGES

NEW YORK

DETROIT

LOS ANGELES

ST. LOUIS\*

MINNEAPOLIS

DENVER

MIAMI

August, 1943

Say you saw it in SOAP!

# JAVONELLA

## Perfect for *Perfuming*



**Laundry Soaps**

**Washing Powders**

**Liquid Cleansers**

**Polishes, etc.**

Even when Oil of Citronella was low in price and easy to obtain, JAVONELLA was a reliable favorite. A great many manufacturers preferred its finer, cleaner odor, its uniform quality and consistent economy. And now that Citronella is so high in price and difficult to get, JAVONELLA is more important to you than ever before.

### **FELTON CHEMICAL COMPANY**

599 JOHNSON AVE.

BROOKLYN, N. Y.

Manufacturers of AROMATIC CHEMICALS, ESSENTIAL OILS, PERFUMES AND FLAVORS  
BRANCHES IN PRINCIPAL CITIES

*\* Write for Samples & Quotations!*

# 5 million estimated cases\* of **ATHLETE'S FOOT**

*Present the* **SANITARY JOBBER**  
WITH A **WARTIME OPPORTUNITY**  
FOR **SERVICE AND SALES**

With 44,000,000 Americans on their feet — in factories and war camps — **ATHLETE'S FOOT** looms as a national menace. There are at least 5,000,000 cases of it right now. The crying need is for a better preventive and treatment. **THAT'S WHERE YOU COME IN.**

Your trade wants a better athlete's foot **FUNGICIDE** —and wants it fast. They have thrown out the dangerous local remedies — the unstable chlorine compounds that rapidly lose strength, the old style toe blisterers . . . the time is ripe for you to step into this essential market with an **ACCEPTED** product.

**HY-AMENE IS THAT PRODUCT.** It kills Athlete's Foot fungi, but it does not irritate raw, tender tissue. It is exactly what industrial doctors, hospitals, and army and navy camps have been searching for. Now **HYSAN** has it for you to sell. Send coupon for sample and the biggest sales story of the year.

\*Industrial physicians consider this a low estimate.

## **HY-AMENE**

### **KILLS ATHLETE'S FOOT FUNGI**

A new all-purpose concentrated disinfectant and treatment for Athlete's Foot • kills the fungi on feet or premises • applied in foot baths, or by spraying or mopping on floors, benches, mats, lockers • in washrooms, swimming pools, corridors, gymnasiums, etc.

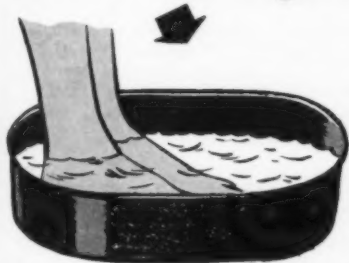
### **5 BASIC FUNCTIONS...**

**HY-AMENE** functions as a germicide, antiseptic, deodorant, fungicide and disinfectant. It is safe on open skin tissue, non irritating, non corrosive — stable in any dilution. . . . **HY-AMENE** is free from the restrictions that apply to old style disinfectants.

### **Sell HY-AMENE to**

Factories • Swimming Pools • Clubs  
Schools • Institutions • Army Camps  
Naval Bases

## **Introductory HY-AMENE DEAL**



# *Free*

This Sturdy Tenite  
**FOOT BATH**  
with each 50 gal. bbl. of **HY-AMENE**

SIZE 15" x 19" x 5 1/2" DEEP • RETAIL VALUE \$9.75



**HYSAN PRODUCTS COMPANY**

August, 1943

Say you saw it in SOAP!

*Mail this coupon*  
**FOR FREE DEAL OFFER**

Get the whole big sales story — and proof that **HY-AMENE** is a basic improvement over every other product in the disinfectant field.

**HYSAN PRODUCTS CO.**  
58 E. Cullerton Street, Chicago

SEND FREE DEAL OFFER, SAMPLE and complete **HY-AMENE** SALES STORY.

Firm.....

Street.....

City.....By.....

S-8-43

58 E. CULLERTON ST., CHICAGO

# SANITARY PRODUCTS

their manufacture, testing and use

By Leonard B. Schwarcz

## CONTENTS

**Sanitary Products Industry** — reviewing the type firms in the industry, the products they manufacture, and their annual value.

**Discovery of Bacteria**—historical background on the germ theory of infection.

**Principles of Disinfection** — the role of chemical preparations in disinfection; definition of disinfectant terms.

**Coal Tar Disinfectants**—a review of their manufacture and use.

**Cresol Compounds**—Liquor Cresolis Compositus, B.A.I. Compound, petroleum-type cresylics.

**Pine Oil Disinfectants**—manufacture, properties and uses.

**Hypochlorites**—manufacture, properties and uses of chlorine disinfectants.

**Formaldehyde**—its applications in the disinfectant field.

**Oil Soaps**—manufacture, sale and use of jelly soaps, green soaps, auto soaps, floor scrubbing soaps, etc. Special attention is given to manufacture of oil soaps from fatty acids.

**Liquid Soaps**—The case for liquid soaps for wash-room use. A review of raw materials, manufacturing methods, use, etc., with special attention to the problems of clarity, concentration, dispensing equipment, etc.

**Soap Dispensers**—a review of the common types of liquid and powder soap dispensers, push-in, push-up, tilt, goose-neck, pullman, etc.

**Floor Waxes**—A review of raw materials for floor wax manufacture and a study of manufacture and application of liquid waxes, paste waxes, water-emulsion waxes.

**The Insect Problem**—A review of the general role which insecticides must fill in man's battle against the insect world.

**Pyrethrum Insecticides**—The important place that pyrethrum has taken in the manufacture of non-poisonous insecticides. Manufacture, testing and use of pyrethrum insecticides are reviewed.

**Rotenone Materials** — Occurrence and toxicity of rotenone, and its use as an insecticidal raw material. Comparisons with pyrethrum on toxicity and deterioration.

**Synthetic Insecticides**—The most complete review yet published of the chemical nature, characteristics, and use in insecticides of a dozen synthetic materials.

**Activators**—The action of activators in stepping up insecticide toxicity. A study of activators which are in current use.

**Roach Control** — Roach powder formulation. The role of sodium fluoride and borax.

**Bedbug Liquids**—Control methods and special preparations.

**Livestock Sprays**—Manufacture and use of cattle sprays, with particular emphasis on repellency, application and choice of oil base.

**Sprayers**—A review of hand, continuous and electric types. Applicators for aerosols are also discussed.

**Moth Preparations** — Use of paradichlorobenzene, naphthalene, cedar preparations, etc., in moth control. Cautions on labeling.

**Deodorant and Urinal Blocks**—Para vs. naphthalene blocks. Pressed vs. molded blocks. Perfuming, wrapping, etc.

**Labeling and Packaging**—The most complete review ever published of the obligations of the sanitary products manufacturer under the Insecticide Act of 1910, The Caustic Poisons Act, The Federal Trade Act, the Food, Drug and Cosmetic Act and the various state laws. Typical decisions of the AMA and the FDA in reviewing offending labels are presented, along with sample labels of approved content.

**Appendix**—Complete text of Insecticide Act of 1910, Caustic Poisons Act, Peet-Grady Test for Insecticides, FDA Method for Disinfectant Testing, Mercury Reduction Method, Seil Method, NAIDM Specifications, list of approved antidotes.

SANITARY PRODUCTS has standard high-grade book binding, cloth and board covers, 6 x 9, 312 pages. Priced at \$5.00 per copy. Check must accompany order. Orders for books to be sent on approval cannot be accepted, but the usual return privilege will be accorded where copies are returned unmarred within 10 days. Owing to present conditions, the first edition must be limited. Accordingly an early order accompanied by check is suggested.

Published by

## MACNAIR-DORLAND CO.

254 West 31st Street

New York, N. Y.



**Bombs,**

**Baby powder,**

**Beef Broth**

**and Borax**



**S & S Machines solve Wartime Packaging Problems for  
packers of Munitions — Drugs — Foods — Chemicals!**



*Need help in solving a wartime packaging problem? Packers of dried eggs did and S & S engineers combined three S & S Universal Fillers with a Neverstop Automatic Carton Feeding Machine to produce finished lend-lease packages at the rate of 60 per minute! ★ Chemical Warfare and Ordnance Departments flashed a request for rapid conversion of existing equip-*

*ment to bomb loading. S & S made changes in S & S Fillers that solved that problem. ★ The Quartermasters and their suppliers needed equipment for tricky packaging jobs for foods in emergency field rations kits. The S & S Transwrap Machine forms, fills and seals these packages at speeds of from 50 to 100 per minute. ★ Packers in the fledgling dehydrated foods industry brought a variety of especially tough*

*problems . . . and S & S helped many find, first, the right package, and then the machine for its rapid production. ★ Chemical, drug and food plants pondered conversion away from use of critical materials. S & S Tight-Wrappers and other machines met these packaging needs. ★ These success stories can be duplicated; S & S engineers can do the job for you! Powder, granular substance or paste . . . there's an S & S machine to fill it and to package it, speedily, economically, in packages that really protect. Ask—*

**STOKES & SMITH CO**

4915 Summerdale Ave., Philadelphia, U. S. A.

**FILLING • PACKAGING • WRAPPING MACHINES**

TO KEEP IN TUNE WITH TODAY'S DEMAND B



The  
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330

OUR  
CON

ND **BUY WISELY...BUY**

# GIVAUDAN



The *extra values* traditional in Givaudan aromatics are especially reassuring now, sounding, as they do, a true note over a broad scale of aromatic requirements.

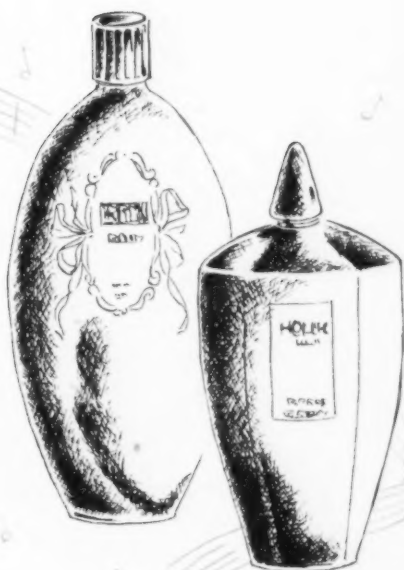
As the war economy tightens, maintenance of cherished standards of quality, and of reputation painstakingly built over the years, becomes increasingly a challenge to the perfumer's art. At such a time, careful selection of available perfume raw materials is most essential.

That Givaudan is able to offer reliable materials to meet the emergency is a tribute to the creative talents and abilities of Givaudan to develop aromatics that meet present-day requirements...convincing evidence that *it pays to Buy Wisely—Buy Givaudan.*

*Givaudan—  
Delawanna, Inc.*

330 WEST 42nd STREET • NEW YORK, N. Y.

OUR PLANT FACILITIES ARE AVAILABLE FOR ANY FURTHER  
CONTRIBUTION WE MAY MAKE TO PRODUCTION OF MATERIALS  
FOR THE WAR EFFORT.



## THE EXECUTIVE WHO STOPS TO THINK . . .



*Knows that "10% for War Bonds isn't enough these days"*

Workers' Living Costs going up . . . and Income and Victory Tax now deducted at source for thousands of workers . . .

Check! You're perfectly right . . . but all these burdens are more than balanced by *much higher FAMILY INCOMES for most of your workers!*

Millions of new workers have entered the picture. Millions of women who never worked before. Millions of others who never began to earn what they are getting today!

A 10% Pay-Roll Allotment for War Bonds from the wages of the family bread-winner is one thing—a 10% *Pay-Roll Allotment from each of several workers in the same family is quite another matter!* Why, in many such cases, it could well be jacked up to 30%—50% or even more of the family's *new money!*

That's why the Treasury Department now urges you to revise your War Bond *thinking*—and your War Bond *selling*—on the basis of *family incomes*. The current

War Bond campaign is built around the family unit—and labor-management sales programs should be revised accordingly.

For details get in touch with your local War Savings Staff which will supply you with all necessary material for the proper presentation of the new plan.

Last year's bonds got us started—*this year's bonds are to win!* So let's all raise our sights, and get going. If we all pull together, we'll put it over with a bang!

This space is a contribution to  
America's all-out war effort by

SOAP & SANITARY CHEMICALS




you've done your bit  
... now do your best!

★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★





*first impressions  
are important!*



**W**omen are especially susceptible to first impressions—and to perfume. Women are also the biggest buyers of soap.

Permit our perfumers—so rich in experience—so creative in soap scenting—to give instant and long-lasting appeal to your soap by sending us samples of your product—perfumed or not.

VAN AMERINGEN-HAEBLER, INC.  
315 FOURTH AVE. NEW YORK



## *Scarcity of floral oils . . .*

Present dwindling supplies of natural floral essences emphasize the value of high quality substitutes.

Synthetic floral essences can be used to replace the natural oils with full satisfaction and marked success in numerous products, — toilet soaps, shampoos, shaving creams, powders, creams, and many others.

In fact, in many products the newer synthetic floral essences are to be *preferred* for the manner in which they reproduce the true fragrance of the living flowers in the finished product,—not to mention uniformity of quality and odor fidelity, and their economy under preset conditions.

Let us tell you more about these newer substitutes as an answer to the growing scarcity of natural floral oils.

## **NORDA Essential Oil and Chemical Co., Inc.**

*Chicago Office*  
325 W. Huron St.

*Los Angeles Office*  
2800 E. 11th Street

*St. Paul Office*  
253 E. 4th St.

*Toronto Office*  
119 Adelaide St., W.

*New York Office*  
601 West 26th St.

*Montreal Office*  
135 Commissioners St., W.

**POINTS TO  
REMEMBER  
ABOUT**

**"BEAMAX"**  
DRIES TO A LUSTRE  
**LIQUID WAX**

- 1** Economical. A thin coat dries in a few minutes to hard, lustrous finish *without polishing*.
- 2** For use on rubber, wood, linoleum, rubber tile, asphalt tile, mastic, terazzo and cement.
- 3** Does not solidify in storage.
- 4** Has no unpleasant odor.
- 5** Always delivers full value.

**THE DAVIES-YOUNG SOAP COMPANY  
DAYTON, OHIO**

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# JONES TOGGLE PRESSES

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*...for soap*

*...deodorant blocks*

*...tile and ...?*



SOAP pressing thirty-five years ago on the old foot press, was a tedious and hazardous process. The best operator rarely stamped more than twenty-five cakes a minute. Our first press, though admittedly crude, was automatic, ran at the relatively high speed of 60 per minute, and was thoroughly safe for operators. Now, after thirty-five years of constant improvement, the Jones Soap Press, with its Toggle Motion, and simple, positive design, has made soap pressing efficient as any operation or process in all industry.

Other important uses for Jones presses are

of more recent development. They have been used with outstanding success to press both tile and deodorant blocks. These operations, formerly slow and expensive, are now as efficient as soap pressing.



We are now experimenting with the pressing of dehydrated foods into block form. The results promise a rapid means of preparing these foods for convenient packaging and shipping.

If your product requires compression into block form, let us hear from you. It is likely that it can be handled on a Jones Toggle Press at a fraction of your current cost.

The Standardized CONSTANT MOTION CARTONER packages bottles, jars, tins, collapsible tubes and many other articles. It feeds, folds, and inserts direction sheets and corrugated board liners with the loads.

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## R. A. JONES & COMPANY, INC.

P. O. BOX 485

CINCINNATI, OHIO

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# EDITOR

**A**PPARENTLY dormant since last March, the plan of F.D.A. to require replacement by non-fat substitutes for a definite percentage of all fats used in soap manufacture, is soon to be put into operation, according to Washington advices. In fact, an order from F.D.A. in this direction appears to be anticipated within the next few weeks. Although the required percentages will vary according to the type of soap, the over-all average will probably approximate ten per cent. This could mean an increase in total soap output anywhere between a half-million and a million pounds per day.

In discussing this soap extender plan in our issues of last March and April, when the subject was being quite widely talked about in Washington and among soapers, we indicated that trade gossip placed the likely percentages at two per cent for toilet soap, five per cent for chips and flakes, ten per cent for granules and powders, and higher figures for laundry soaps, particularly the yellow grades. The choice of extenders then, we understood, was to be left to the discretion of the soap manufacturer, that is whether he should use rosin, tallol, alkaline salts, or fillers. The chances are that approximately these same figures and conditions may be carried in the F.D.A. order, if and when issued.

Soapers on the whole have not looked with too much favor on any enforced substitution of non-fat materials in their soaps. This is particularly true among those who produce higher grade products. Some have already undertaken their own plans for extending their fats, in a few instances on a rather wide scale particularly in the

use of greater tonnages of rosin. But we do not believe that any soap maker likes the idea of mandatory substitution by Government order. Nevertheless, if in conjunction with increased coconut oil and certain other fats supplies which F.D.A. has been able to release for soap manufacture more recently, the enforced use of fat substitutes can aid in boosting soap output and avoiding the threat of rationing, we feel that it represents the less bitter medicine.



**L**ARD and grease production per hog slaughtered thus far this year is lower than it was last year despite the fact that the hogs have averaged almost seven per cent heavier in live weight this year than last. As is quite well known, the fat has been going to market attached to the meat instead of being trimmed off for lard and grease production as in more normal times. Not that the packers have chosen this course. They have been forced to sell every pound of fat possible at meat prices,—or literally to go broke. Backed into a tight corner by O.P.A. ceilings and regulations, they took the only path,—a path made possible by an acute meat shortage and an absence of competition,—that would permit them to keep their heads above water.

That the present absurd situation will not be corrected permanently until there is a return of normal competitive conditions in the production and sale of meats, we feel, is quite obvious. The O.P.A. in its inimitable professorial way forced the packers to sell fat for meat and in turn engendered the very situation which made this

subterfuge possible. They have since gone further in the issuance of their new meat trimming regulations. These too would appear to have a very low par in practicality and, we feel, will also break down in practice.

Instead of O.P.A. following each juggling act of the law of supply and demand with another more complex than its predecessor, why not stop for a minute and look at things from a basis of experience and plain common sense? Give the packers, —and the renderers too,—a chance to see daylight through the maze of regulations and red tape with which they are surrounded, remove all barriers possible to the free flow of commerce and the operation of competition,—and tallow and grease supplies will soon begin an approach to normal. But until O.P.A. monkey wrenches are removed from the gears of the packing and rendering industries, any solution of the animal fat shortage at the soap kettle or elsewhere can be only temporary.



**C**OCONUT oil consumption in the soap kettle has increased during the past month or two. The pendulum of available coconut stocks, having passed the low point back in April-May, is on the upswing. Most soapers have taken advantage of better supplies to increase the coconut content of their soaps, a few having reported that they are now using double the percentage previously used. But when we consider that some were using as little as three per cent, the present higher figure may not mean too much.

At the moment, good tallow is still very scarce, forcing soapers to use lower titre and off-grade substitutes. However, there seems to be a ray of sunshine in this direction also. A marked increase in cattle slaughter and a corresponding expansion in tallow supplies is in the offing. Coupled with larger coconut oil stocks, this should to some degree relieve the present plight of the toilet soap manufacturer.

When we consider the type of raw materials with which the average soaper has had to work during the past six months, the quality of soaps on the market is surprisingly good. Of course, they do not meet pre-war standards when coconut oil, good tallow and greases were plentiful, but they are nevertheless a tribute to the ability and ingenuity of the soap maker.



**W**HAT should or should not be the aims of soap advertising today? Should it emphasize soap conservation or should it continue mainly to popularize soap brands? In view of the fact that several of America's leading soap manufacturers are currently engaged in advertising campaigns, one of which stresses conservation and the others of which are based on straight product copy, the answers to these questions have far more interest than usual,—particularly if we consider the bearing which they might have on the much-discussed subject of soap rationing.

Advertising copy which today has "don't waste soap" for its main theme, seems to be on the dangerous side. With talk of soap rationing, —and there has been lots of such in spite of efforts to hush it up,—this type of copy might readily be interpreted by the average housewife as a warning issued in anticipation of rationing. Her train of thought is obvious,—if a leading soap manufacturer who is normally interested in selling more soap, warns against soap waste, soap must be very scarce and maybe rationing is just around the corner,—and we had better lay in a good big supply now.

If another country-wide stampede in soap buying is to be avoided, the less agitation of the public mind in regard to scarcity and rationing, the better. Warnings not to waste soap imply a scarcity,—and the public knows that if the scarcity becomes severe enough, rationing must and will follow.

## Studies on

# SYNTHETIC DETERGENTS

by *Jay C. Harris\**

Monsanto Chemical Company

THE inability of the U. S. Navy Department in March, 1942 (1) to obtain a sufficient number of bids to cover requirements of salt water soap was probably the fact which focused attention on synthetic detergents for salt water usage. The Federal specification P-S-611 (2) for this soap required the use of coconut or palm kernel oils which no longer were available in the quantity required. The Army had early been forced to use synthetic detergents in their mobile laundry units because of the water conditions which might be encountered. Another reason for their choice of a synthetic agent in preference to others was the relatively short washing cycle which is observed and the necessity for using a material which would not cause dermatitis if not fully rinsed from wearing apparel.

### Studies on Synthetic Detergents

With the exception of a paper by Ruckman, Hughes and Clark (1) there have been no recent publications covering sea water detergents, nor is there information showing the effect of extremely hard water upon the deterative effect of certain widely used synthetic agents. These investigators described sea water detergency tests with a synthetic detergent-soap combination at 2 per cent, 4 per cent, and 6 per cent in which excellent results were obtained. This combination is covered by Bureau of Ships Ad Interim Specification 51D7 (Int) and requires minimum amounts of 30 per cent anhydrous, salt-free soda soap and 20 per cent-anhydrous, salt-free synthetic de-

tergent. This product is shown by these investigators to be approximately three times as effective as the formerly used salt water soap at 2 per cent concentration,  $2\frac{1}{2}$  times at 4 per cent concentration, and no essential difference at 6 per cent concentration. Their results indicate that use of this type product should yield improved, lower cost cleansing, since smaller quantities of detergent are required. The product has improved solubility, and also possesses greater rinsability. Either of these improvements individually might warrant the merchandising of such a product by manufacturers.

Aside from the general purpose bar soap described in Bureau of Ships Specification 51D7, which was designed for cleansing by hand, there is need for power laundry detergents useful in sea water. In general, an anhydrous soap-containing composition is rather difficult to dissolve in sea water, and this probably would tend to eliminate the 51D7 type material in relatively anhydrous powder or flake form for use in power washing operations, especially dry to the wheel. Furthermore, a suitable composition containing no soap would probably be more economical, and there would be less tendency to insoluble curd formation. Wherever an adequate water supply is available and time requirements are not too pressing, more satisfactory cleansing, especially of heavily soiled garments, could be attained by combining a suitable alkali with the synthetic detergent.

Aside from the development by the Bureau of Ships of a detergent for power laundry use, the Army is developing an all-purpose toilet cake. This product will require considerable

amounts of a synthetic agent to make its performance acceptable. Other specifications which mention the use of synthetic detergents are:

Compound, Cleaning; For Painted Surfaces

Bureau of Ships Ad Interim Specification 51C20 (Int)

March 15, 1941.

Compound, Cleaning; For Painted Surfaces

Proposed Federal Specification

June 9, 1942.

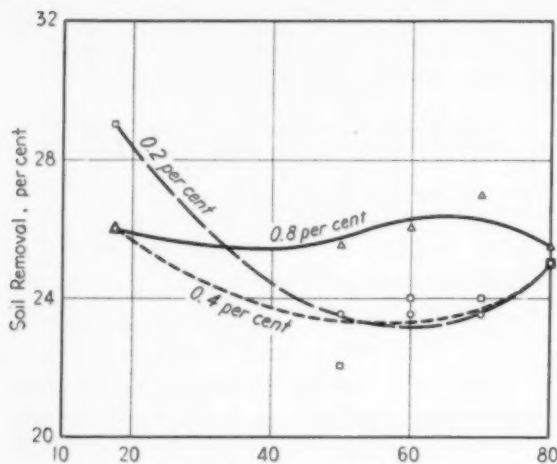
One or two other specifications mention the use of synthetic detergents but for reasons of national defense these cannot be abstracted either in whole or in part. Once these combinations of materials have been "battle tested," it is likely that they will find continued and expanded usage in civilian life, once conflict has ended.

There is no published comparative detergent data made under extremely hard water, or sea water conditions with synthetic detergents, combinations of synthetic detergents with soap, or with alkaline builders. A definite need for such data exists if the most suitable materials are to be used effectively and economically. Our several objects in performing these experiments were:

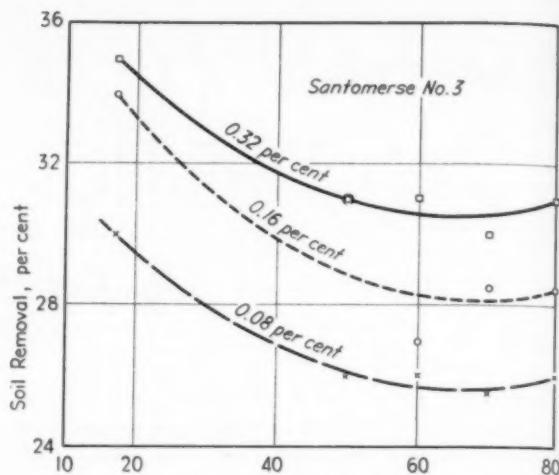
1. The determination of the effect of extremely hard water upon one type of synthetic agent.
2. The determination of the optimum amount of detergent to produce adequate cleansing results in extremely hard water.
3. The evaluation of combinations of synthetic detergent and certain builders in extreme hardnesses.
4. The development of data for synthetic sea water cleansing and the determination of the optimum concentration range for synthetic detergent and 51D7 salt water detergent.
5. The preparation of data to demonstrate the most effective combinations of soap and synthetic detergent, and synthetic detergent and alkaline builders.

\* Paper presented at a meeting of Committee D-12 on Soaps and Other Detergents of the American Society for Testing Materials, June 8, 1943, New York. Released for use by Soap & Sanitary Chemicals with the permission of the American Society for Testing Materials.





Grains Hardness  
Figure 1



Grains Hardness  
Figure 2

It is obvious that a program of this type could have been lengthened extensively unless certain limits were arbitrarily set. We, therefore, confined our investigation to one synthetic detergent in several forms of varying active ingredient content; to extreme conditions of hard water usage; to synthetic sea water; to certain alkalis which have been proved effective in hard water and to concentrations of detergent which provided adequate soil removal. Extension of the program could be made to include other synthetic agents, other alkalis and varying percentages of the combinations, finally supplemented by power wash wheel tests under conditions of usage.

The data provided by our experiments should prove of value to the armed forces and to the industry in the development work which they are doing on these synthetics, and synthetic and soap combinations.

### EXPERIMENTAL DATA

**Materials Tested**—All materials were tested on the anhydrous basis  
Santomerse No. 1—40% active ingredient  
Santomerse No. 55—55% active ingredient  
Santomerse No. 3—99+% active ingredient  
Chip Soap—Titer 37.2. A widely used tallow—cocoanut soda soap.  
Tallow Kettle Soap—Titer 39.5. An all tallow soda soap.  
Tetrasodium Pyrophosphate—technical, anhydrous  
Trisodium Phosphate—technical, hydrated.  
Sodium Carbonate—C.P. grade  
Sodium Acid Pyrophosphate—technical grade

**51D7 Salt Water Detergent**—Laboratory grade—Prepared with tallow kettle soap and Santomerse No. 55 according to 51D7 specifications.  
—Plant grade—A sample which it is claimed meets the 51D7 requirements.

### Synthetic Hard Water

Hardness as parts per million  $\text{CaCO}_3$  using calcium chloride and magnesium sulfate so that 60% of the hardness is Ca and the balance Mg.

### Synthetic Sea Water

	Grams Liter
Magnesium chloride ( $\text{MgCl}_2 \cdot 6\text{H}_2\text{O}$ )	22.0
Calcium chloride ( $\text{CaCl}_2 \cdot 2\text{H}_2\text{O}$ )	3.2
Sodium sulfate ( $\text{Na}_2\text{SO}_4$ )	8.0
Sodium chloride ( $\text{NaCl}$ )	50.0

**Note:** This is double the concentration required by the 51D7 specification, but the detergent sample is first dissolved in distilled water, to twice the percentage concentration desired, cooled, then diluted with an equal volume of the sea water formula.

### TEST CONDITIONS

Although the details of the wash test procedure are described in an earlier paper (3) it may be well to review them here:

Standard Soil—Oilclag 30 g.; Wesson oil 7.5 g.; Carbon Tetrachloride 1800 ml.  
Applicator—Mechanical, comprising a box containing the soil solution, wringer rolls and dryer tube.  
Fabric—Indian Head, 54 x 46 thread count.  
Fabric: Solution Ratio—1:29.  
Number of replicate swatches—2.  
Number of washes—4.  
Duration of wash—10 minutes.  
Volume of wash solution—100 ml., discarded after each wash.  
Temperature of wash— $140 \pm 2^\circ\text{F}$ .  
Number of rinses—two of water hardness in use.  
Washing apparatus—Standard Launderometer.  
Number of rubber balls used—10.

Speed of rotation of Launderometer— $40 \pm 2$  RPM.

Lather—estimated at second wash. Cannot be greater than 4 inches.

pH values—determined with wash solutions, using L & N glass electrode.

Photometer—Lange photoelectric.

All Tests—Anhydrous basis.

The Lange photoelectric photometer was used to measure the degree of soil removal. White, unsoiled but desized Indian Head fabric was used as 100 per cent white (maximum whiteness attainable) and the standard soil used in the particular test was used as 0 per cent white or 100 per cent black. On this basis, soil removed during the washing operation was measurable as direct percentage soil removal.

The method for reducing the test results to a single significant figure was as follows: The wash test results for each of the duplicate 10-minute washes were averaged, and an average calculated from these four. This corresponds to a percentage soil removal value based upon the following equation:

$$\% \text{ Soil Removal} = \frac{a + b + c + d}{4}$$

All the curves were based upon the average of not less than two complete series of wash tests.

The foregoing data describes the "multiple suds" method of operation. A "single suds" method was employed for certain tests, the re-



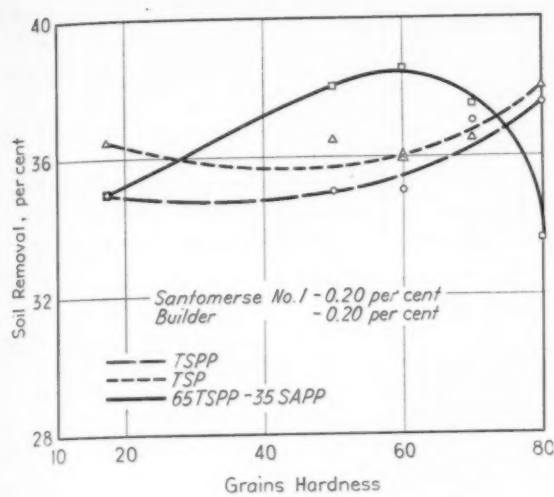


Figure 3

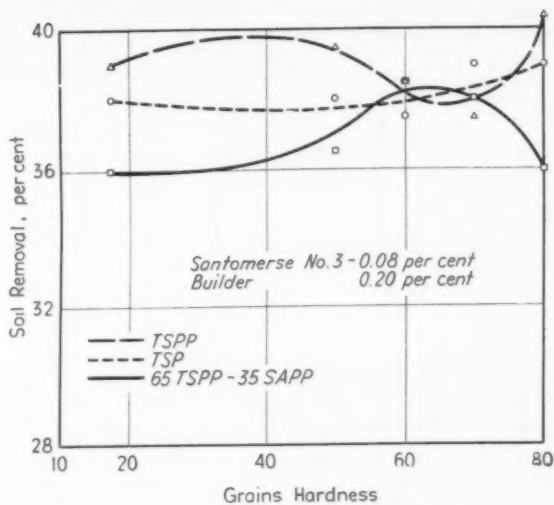


Figure 4

sults of which are described later on. In this operation, the only variation from the usual test was to wash only once, for a 15 minute period, rinsing as usual in the water used for the test.

pH values were obtained with the Beckman equipment using a high pH glass electrode where pH values were 8 or above. The wash solutions were tested at a temperature of  $25 \pm 2^\circ \text{C}$ .

#### DISCUSSION OF RESULTS

##### Hard Water Tests

The first series of tests were made to determine the effect of ex-

tremely hard water upon varying concentrations of "Santomerse No. 1" and "Santomerse No. 3."\* It will be noted in Figure 1 that increasing water hardness with 0.2 per cent and 0.4 per cent concentrations of "Santomerse No. 1" tends to reduce cleansing efficiency, but that an 0.8 per cent concentration is practically unaffected by water hardness.

The results with "Santomerse No. 3" (Figure 2) show that increasing water hardness reduces deterse efficiency, but that an 0.32 per cent concentration produces the highest de-

gree of soil removal. It is interesting that an 0.8 per cent concentration of "Santomerse No. 1" contains 0.32 per cent active ingredient, and that the absence of sodium sulfate in this test apparently provides improved soil removal. In the course of considerable experimental work we have repeatedly proven that pH adjustment above neutrality, especially in the range of 9.5-10.5 will result in marked increases in soil removal, especially if the soil is

\* Synthetic detergents made by Monsanto Chemical Co., St. Louis, and containing as the active ingredient what is essentially dodecylbenzene sodium sulfonate.

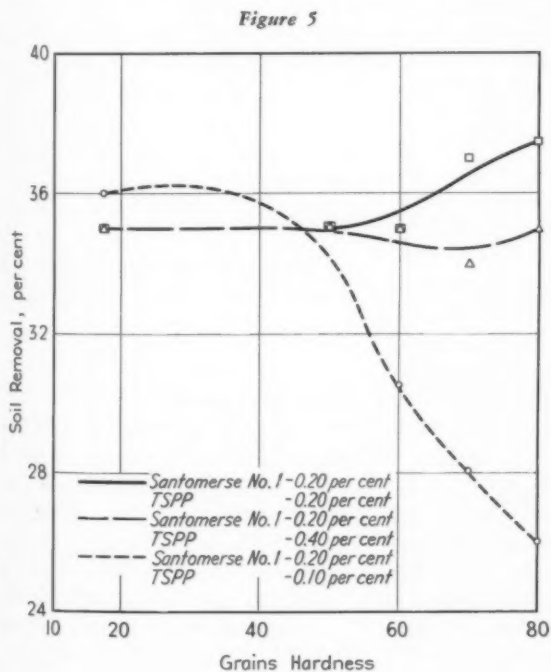


Figure 5

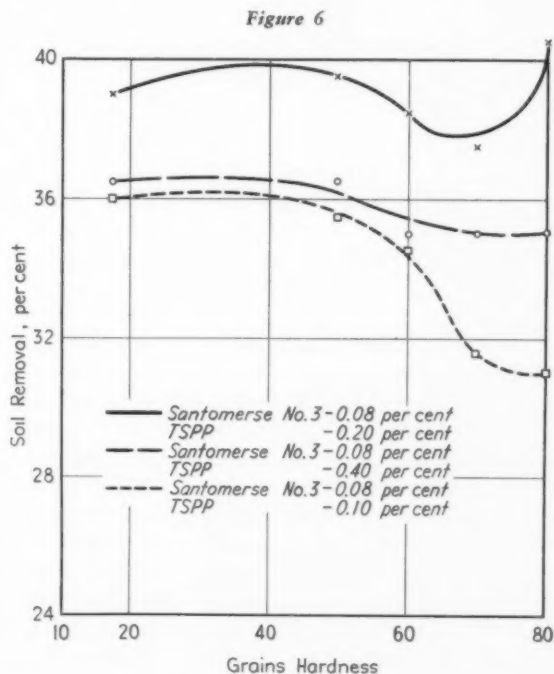


Figure 6

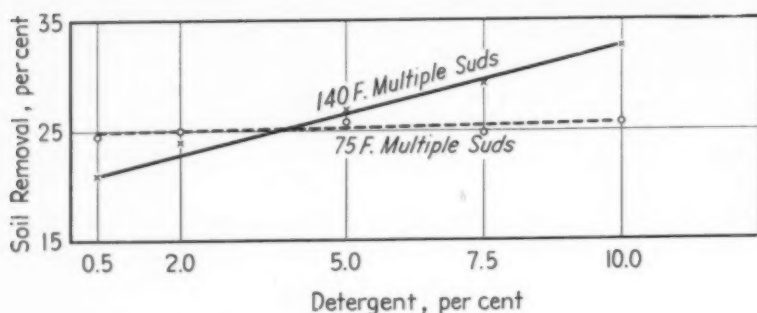


Figure 7

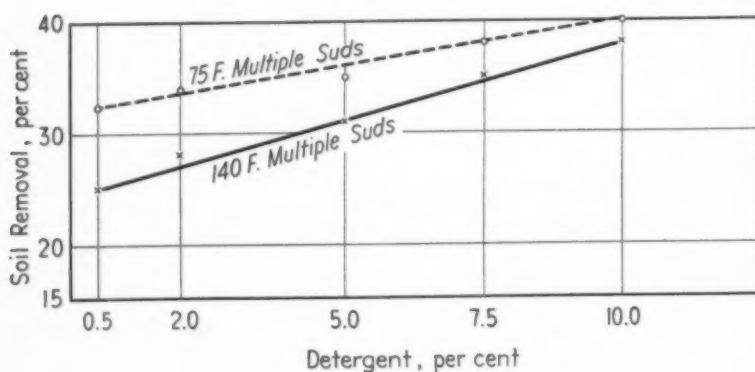


Figure 8

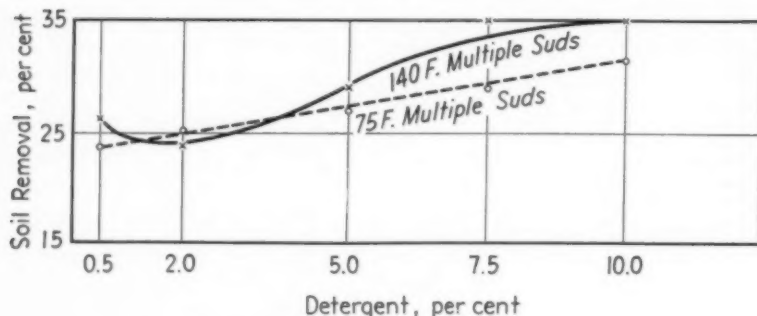


Figure 9

of the difficultly removable type. The addition of TSPP, TSP or a 65-35 mixture of TSPP-SAPP resulted in marked improvement in soil removal over "Santomerse" alone as is shown by comparison of Figure 1 with Figure 3. That this improvement is not confined to "Santomerse No. 1" is shown in Figure 4, in which an active ingredient concentration of 0.08 per cent of "Santomerse No. 3" was tested in combination with the same alkaline builders. Slightly higher detergent results may be attributed to the absence of sodium sulfate, since the active ingredient concentration for either product is identical under the test condi-

tions. In the next series of tests, the percentage of "Santomerse No. 1" was maintained at 0.2 per cent and the percentage of TSPP was varied to ascertain the optimum amount to maintain good detergency even though water hardness was increased to a high level. Reference to Figure 5 shows that an 0.2 per cent concentration of TSPP produced the desired level of cleansing. The same type of test was made with "Santomerse No. 3" at 0.08 per cent concentration, varying the TSPP as with "Santomerse No. 1." Figure 6 shows that again an 0.2 per cent concentration of TSPP in combination with "Santomerse No. 3" resulted

in the optimum degree of soil removal.

These tests conclusively show that wherever possible, that is, where there is an adequate supply of water, sufficient processing time so that alkali may be rinsed from the garments, or where a sour may be used, that TSPP or TSP combined with "Santomerse" will result in improved cleansing.

#### Sea Water Tests

SINCE hard water reduces the detergent efficiency of "Santomerse" when insufficient amounts of the detergent are used, it was expected that sea water tests would corroborate these findings. This indeed was the case, though the effect was less noticeable because the tests were begun at a 0.5 per cent detergent concentration (see Figures 7, 8 and 9).

"Santomerse No. 1" concentration has little effect upon detergency at 75° F., but slightly increased detergency results with greater concentration when tests are made at 140° F. Improved soil removal is obtained with "Santomerse No. 55" (Fig. 8) as compared with "Santomerse No. 1," and increased concentration results in increased soil removal. In all three cases, however, relatively poor deterative action is obtained, especially when the results are compared with those obtained with the 51D7 salt water detergent shown in Figures 10 and 11. (Illustrations will accompany Part II) With the 51D7 product there is an almost 100 per cent greater soil removal than was obtained with the synthetic detergents alone, even though the active ingredient content of the synthetic agent is actually lowered, and soap is present, which alone is a relatively poor salt water detergent.

(To Be Concluded)

#### Tall-oil Treatment

Tall oil which has been hydrogenated to the extent that the original unsaturated fatty acids have been converted at least to oleic acid, is dissolved in an organic solvent such as acetone and chilled to about -60° to precipitate fatty acids. Ernest Segesemann, to National Oil Products Co. U. S. Patent No. 2,305,498.

# COPAIBA and COPAIBA OIL

By Dr. Ernest Guenther

Fritzsche Brothers, Inc.

COPAIBA is an oleoresin obtained, by incision, from the trunk of various South American species of the genus *Copaifera* (fam. *Leguminosae*), a tall, much branched tree, with a huge trunk and a smooth bark. It occurs wild in the great forests and jungles of northern South America, especially in Brazil (Amazon Basin), and also in Venezuela, Guiana and Colombia. Of the different types reaching the world market, the product from the middle and lower Amazon Basin is, by far, the most important one. It is known under the commercial term "Pará balsam" and includes also copaiba originating from Manáos, a city located on the junction of the Rio Negro and Rio Amazonas. Both products are shipped abroad from Belem-Pará, at the mouth of the Amazon delta. Thus, the markets in North America, Europe and the Far East are supplied mainly with copaiba from the Brazilian states of Pará and Amazonas, seldom with that of Bahia.

The producing regions in Brazil are—

## I. State of Pará

They stretch over the lower Amazon Basin, mostly south of Belem-Pará. The trees grow in wide areas, along the larger tributaries of the Amazon, the smaller ones not yet being exploited. There are no copaiba plantations, all trees growing wild in the somewhat drier sections of the jungles. Native woodsmen, financed by traders or exporters, but not employed on a fixed wage basis, exploit those trees. The natives consider the job of a day laborer as below their dignity and prefer to work on their own account.

The southern tributaries of the Amazon River, from where copaiba



Tapping a Copaiba Tree in Brazil

comes, are the Tocantins, Anapu, Pacaja, Xingu and Tapajoz. Production along some of the northern tributaries, for instance, the Paru, Jary, and Yamunda, is insignificant.

## II. State of Amazonas

As we shall explain later, only the so-called insoluble balsam comes from this district, probably because of the more humid climatic and soil conditions of these regions. Aside from the banks and adjacent sections of the Amazon River, copaiba is collected also along the Madeira, Purus, Jurua, Negro and Branco.

Copaiba is considered a cell wall decomposition product of the wood parenchyma. The schizogenous cavities within the wood and pith of the tree trunk in which the copaiba accumulates, enlarge and join to form reservoirs of surprisingly large capacity, holding gallons of oleoresin. When the tree is tapped, the copaiba flows from the wound as a clear, colorless

and thin liquid which, however, soon acquires a thicker consistency and a yellowish tinge.

Literature cites a number of *copaifera* species from which copaiba is said to be collected, but the botany of the trees, which are actually exploited, remains rather confused. According to Freise<sup>1</sup>, who undertook a study of the subject, the genus *copaifera* is represented in Brazil by 15 species occurring in all States from the extreme north to Sao Paulo. Only the following species are of commercial interest:

- (1) *C. Reticulata* Ducke.  
70% of all Brazilian copaiba balsam originates from this species.
- (2) *C. Guianensis* (Desf.) Benth.  
About 10% of the exported product is collected from this species.
- (3) *C. Multijuga* Hayne.  
Export share about 5%.
- (4) *C. Officinalis*, L.  
Not more than 3 to 5% of the exported copaiba is now derived from this species.

(5) *C. Martii*, var. *Rigida* (Benth.) Ducke.

(6) *C. Coriacea* (Mart.) Ktze.  
It is exported mainly to Belem-Pará for admixture with better grades.

It is quite safe to assume that neither European nor North American importers have ever handled much copaiba balsam of really definite geographical and botanical origin. None of the shippers in Belem or Manáos have any idea regarding the botanical species of the trees from which the various small lots originate. They receive the product in cans (former gasoline cans), or sometimes in drums, as collected in the jungles and brought down the rivers by the Indians. Evidently these workers, too, are quite ignorant regarding the exact botany of the trees which they are tapping. In search of copaiba, they penetrate the wild interior, either by canoe, or on foot, often for a stay of several months. The trees which usually grow on dry land may almost be compared to containers filled in the hollow center with copaiba, which can easily be drawn from them. This is achieved by simply drilling two holes into the trunk, one 10 to 20 feet above ground—depending upon the height of the tree—and another one 2 to 3 feet above ground. A bamboo tube, provided with a simple stopcock, is plunged into the lower hole. Under normal conditions, the copaiba flows easily and quite clearly, especially if the tree has not been tapped for years. It is collected in empty gasoline cans. In case of difficulties, a fire is made next to the tree trunk; the elevated temperature permits the liquid to flow more easily. After completion of the tapping operation, both holes are closed with a simple plug.

The quantity of copaiba drawn from each tree depends upon the botanical variety, its age, the lapse of time since the last tapping, and upon the season. On an average, a tree yields, yearly, about 17 to 18 kilos of copaiba.

In general, the trees are exploited all year round, provided production is stimulated by demand and sufficiently high prices. It must be borne in mind that days and weeks of travelling are required to reach those

remote regions of production and that with the distance from civilization, cost of food, which must be carried along and also cost of transporting the copaiba back to the trading centers, increases not proportionally, but in the square, so to speak.

The collected product is sold in the trading centers to intermediaries, either against cash, or bartered against food, clothing and other necessities of life. Frequently, advances, in the form of cash or food, are made to the workers by the traders or exporters in Belem and Manáos. Accounts are settled by delivery of copaiba and other products of the forests. The crude product is subsequently shipped by canoe or on motor launches down the river to Manáos or Belem-Pará, the two principal exporting centers. The exporters thus receive many small lots, all of different origin, of different color and solubility and all representing mixtures originating from trees of different species and even from different regions. The exporters then eliminate water, bark particles and other foreign matter and assort the lots according to solubility and color.

The shippers in Brazil differentiate between two qualities of copaiba:

- (1) *The so-called soluble balsam:*  
One part must be clearly soluble in 5 to 6 parts of absolute alcohol and stay clear.
- (2) *The so-called insoluble balsam:*  
Not soluble in absolute alcohol.

The State of Pará produces both soluble and insoluble copaiba, the State of Amazonas exclusively the insoluble product. Sixty per cent of the exports from Pará are of the soluble and about 40 per cent of the insoluble quality. Thus, much more insoluble copaiba is shipped from Brazil. The difference in price varies from 10 to 50 per cent and is subject to considerable fluctuation.

Color and density have no relation to solubility; neither is the solubility test a criterion for purity or odor; it simply distinguishes between the two commercial types of copaiba. The solubility test is the only one applied by the exporters in Brazil; no consideration is given to density or other constants which seem to vary with the trees exploited, their age, the regions and period of collecting and other

factors. The odor of the different lots is very similar, at least for the pure, unadulterated product. Some emphasis is given to the color, certain countries specifying lighter color while others are less particular in this respect.

Summarizing, we see that the exporters roughly grade their lots according to solubility and color, trying to ship to the various countries copaiba as required by the respective pharmacopoeias. There has been little bulk-ing of small lots into larger lots, the selecting usually being done simply by assorting the cans according to the specifications of the consumers abroad.

The United States buys mainly insoluble copaiba, usually with little consideration as to color. England insists upon light or amber colored and soluble copaiba. Japan and Germany, before the war, bought both the soluble and insoluble product.

The season of production depends, to a certain extent, upon the region and the prevailing weather conditions. In most sections the best period for collecting is the dry months from July to November, because at that time the trees give the largest yield, while during the rainy season they contain only very little copaiba.

#### Physico-Chemical Properties

**C**OPAIBA is a pale yellow to yellowish-brown, more or less viscid liquid, either without or with only a slight greenish fluorescence. The odor is peculiar and aromatic, the taste bitter, acrid and persistent. The National Formulary, Seventh Edition, specifies the following limits:

Specific Gravity at 25°:	0.930 to 0.995
Acid Value:	28 to 95
Solubility:	Insoluble in water; partly soluble in alcohol; almost completely soluble in dehydrated alcohol. Soluble in carbon disulfide and in fixed or volatile oils; completely soluble in chloroform and in ether; soluble in an equal volume of petroleum benzine, further addition of the solvent producing a flocculent precipitate.





On the waterfront at Belem (Para), Copaiba shipping center.

Four samples of genuine copaiba collected in 1939 by the writer, during his visit to the Amazon Basin, showed the following constants:

Commercial Designation	"Insoluble"	"Soluble"	"Dark"	"Pale"
Sp. Gr. at 25°	0.973	0.962	0.961	0.975
Op. Rot.	-21°20'	-20°20'	-20°18'	-25°20'
Ref. Ind. at 20°	1.5117	1.5099	1.5101	1.5118
Acid Value	74.2	67.2	67.1	79.8
Sap. Value	81.2	71.9	73.7	86.8
Evap. Res.	61.1%	50.0%	49.7%	58.9%
Color	Brown with greenish fluorescence.	Reddish brown.	Reddish brown.	Yellow with greenish fluorescence.

The numerous lots of crude copaiba which we imported during the past ten years from the States of Pará and Amazonas, in Brazil, showed physico-chemical properties varying between the following limits:

Specific Gravity at 25°C:	0.931 to 0.979
Optical Rotation:	+12°36' to -17°0'
Refractive Index at 20°C:	1.5051 to 1.5122
Acid Value:	28.0 to 72.1
Saponification Value:	37.3 to 84.0
Evaporation Residue:	27.4% to 54.2%

The wide variance in these properties, especially in regard to the optical rotation, may be explained by the fact that each can received from Brazil represented a lot originating from a different region, as mentioned previously. All the shipments were tested for adulteration with gurjun

balsam but none gave a positive reaction. In our opinion, copaiba of high specific gravity and high evaporation residue is preferable for employment as a fixative in perfume compounds, as it possesses a smoother and more lasting odor. On the other hand, copaiba of low gravity and low evaporation residue contains correspondingly more volatile oil and is therefore better suited for distilling purposes.

The botanical species, the age of the tree, the age of the lot and its degree of exposure explain the considerable diversity between the different lots of copaiba. When exposed to air, copaiba acquires a dark red-brown color, a thicker consistency and higher specific gravity. When spread over a large surface it becomes dry and brittle. This change is caused partly by evaporation, partly by polymerization of the essential oil. Since the non-volatile resin is a product of oxidation

of the oil, its percentage increases as the copaiba ages.

#### Adulteration of Copaiba

IN former years copaiba was, and to a limited extent still is, adulterated with all kinds of lower priced products for the detection of which certain tests may be applied:

#### Paraffin or Fatty Oils

Fatty oils are used occasionally by the natives or intermediaries in the interior of the Amazon Basin. According to information gathered by the writer in the producing regions, they employ, for this purpose, especially the oil pressed from the seed of the tree *Carapá Guianensis* (fam. *Meliaceae*). The small settlers employ it as lamp fuel, against insects and as remedy for ulcers. The Brazilian exporters claim that an expert can detect presence of this fatty oil in copaiba by a change in odor.

The National Formulary, Seventh Edition, recommends the following test for paraffin or fatty oils:

"Heat about two grams of copaiba, accurately weighed, in a shallow dish on a water bath: it evolves no odor of oil of turpentine. Continue the heating until all of the volatile oil has been driven off: a resin remains corresponding to not less than 27 per cent of the weight of the copaiba taken. This resin, when cooled, is hard and brittle."

The British Pharmacopoeia requires, as a specific test for the absence of fatty oils, that a clear solution be obtained when 3 cc. of copaiba is mixed with 1 cc. of dilute ammonia water.

#### Dehydrated Alcohol-Insoluble Matter

"Dissolve two grams of copaiba in 40 cc. of dehydrated alcohol, filter through a tared filter crucible and wash with small portions of dehydrated alcohol until the washings are colorless or nearly so: the weight of the residue dried at 80°C. does not exceed 5 per cent of the weight of the copaiba taken for the test."

Another adulterant sometimes found in copaiba oils is colophony. It can be detected by the specific test of the United States Pharmacopoeia, Twelfth Edition:

"In testing for rosin as an adulterant in resins, gum resins, and balsams. unless otherwise directed, (Turn to Page 69)

# THE WAY IT LOOKS IN



# Washington

by

C. H. JENKINS

A SERIES of important changes in FDO-42, covering use of fats and oils by the soap industry, was announced by the Food Distribution Administration, July 10. The approved text of the new amendment to the order followed substantially along the lines predicted by *Soap and Sanitary Chemicals* in our issue of July 1. The amended order releases for soap use a number of raw materials which have previously been restricted, notably soybean and whale oils, edible tallow, lard, rendered pork fat, oleo stearine, etc. The soap maker's quota on oil and fat use has been dropped from 84 to 80 per cent, as predicted, but carry-overs beyond June 30 of the unexpired portion of first half quotas are now permitted.

In announcing the new amendment the FDA issued the following bulletin detailing the principal changes in the order:

Manufacturers having unused portions of their second quarter fats and oils quotas for civilian use may now carry them over into the third quarter, but must use them within that period.

Food Distribution Order No. 42 has prohibited any carry-over after June 30, but this prohibition is lifted in an amendment to the order issued by the War Food Administration and effective July 10, 1943.

The amendment also:

(1) Reduces quotas for the use of fats and oils in producing margarine and soaps for civilian use. The margarine quota is reduced from 180 per cent to 167 per cent of the manufacturer's average use during 1940 and 1941, and the soap quota is reduced to 80 per cent. Heretofore, soap made from domestic vegetable oil foots has had a 100 per cent quota, and other

soaps have had an 84 per cent quota.

(2) Adds the Veterans Administration and the Maritime Commission to the list of exempt agencies, permitting unrestricted delivery to them of edible products and soap.

(3) Establishes a new class of uses: the manufacture of enamels and coatings for metal food containers, metal food closures, and food closure liners, permitting up to 100 per cent of the base period. The original order included this use under "protective coatings."

(4) Places further restrictions on the processing of fats and oils for the owner's account, stipulating that the processor cannot purchase the finished product without charging the raw materials to his own quota.

(5) Removes restrictions on deliveries of linseed oil and on the use of fish oils in soaps because separate orders have been issued covering these restrictions. (FDO 63 and FDO 60).

(6) Removes these fats and oils from the list of restricted uses: lard, rendered pork fat, oleo stearine, oleo stocks, edible tallow, soybean and whale oil. They have heretofore been restricted to special classes of use (schedule A FDO 42) except in the manufacture of margarine or other edible finished products.

(7) Changes the date for the filing of manufacturer's reports with the Bureau of the Census from the 20th to the 15th of each month.

(8) Changes the method of reporting the use of fats and oils in protective coatings, coated fabrics, and linoleums for exempt uses.

(9) Includes "soap converters" in the definition of manufacturers; and excludes from the definition of "fin-

ished products" soap sold to a converter. Soap has been more specifically defined, and a new definition of "foot" has been included.

(10) In the manufacture of products for export, it limits the exempt use of fats and oils to edible products and soap.

Soap makers who expect to take advantage of the more liberal terms of the amended order, to make use of lard, refined soya bean oil, rendered pork fat or edible tallow in the soap kettle, have been cautioned in a recent bulletin of the Soap and Glycerine Association that they must apply to the Fats and Oils Section of the FDA for ration certificates as industrial consumers of these edible products.

Another order issued during the past month which affects the status of a soap making raw material is FDO-60, covering use of fish oils. This order permits any maker of water-soluble soaps to purchase and use, in each twelve months beginning July 1, 1943, up to 40 per cent of the yearly average amount of fish oil used by him in the calendar years 1940 and 1941.

A series of interpretations as to what items are properly defined as soap under FD Reg. 1 has recently been issued by Major Ralph W. Olmstead, Administrator of the regulation. Shaving soap and shaving cream, including both the lathering and non-lathering types, have been defined as soap, as have cleansers, scouring powders and metal polishes containing soap. Cleansers, scouring powders and metal polishes which do not contain

soap are not included under the "soap" definition. Soaps for non-detergent purposes and soaps for processing of textiles are considered as "soap" under FD. Reg. 1, but not under FDO-42.

The FDA has recently issued a further clarification of who is a "converter" under FDO-42. Where toilet soap manufacturer A buys toilet soap in frames from soap manufacturer B, (the product being a finished soap lacking only perfume), and mixes the purchased base with a superfatted soap base of his own manufacture, A is classed as a converter. The base which he purchases and mixes must be charged to his own quota.

The use of stabilized rosin in the manufacture of soaps, except soaps for non-detergent purposes, was forbidden by issuance last month of WPB Order M-335. Stabilized rosin is defined as rosin stabilized by hydrogenation, dehydrogenation or disproportionation, but not by polymerization or condensation. Stabilized rosin for permitted uses, including textile and other non-detergent soaps, is placed on monthly allocation by the new order.

IN its original announcement last month that tallow and palm oil from government stockpile would be made available to soap makers, July 15 was named as the final date for the filing of applications for such deliveries by the Fats and Oils Branch of FDA. This deadline for filing of applications has since been extended. Applications for supplies may still be made, although thus far no date has been set for the first actual distribution. The office of Thomas S. Pritchard, Chief of the Imports and Allocation Division, reports that many soap makers have misinterpreted one of the questions which they were asked to answer in filing their applications for this government raw material. In phrasing question 3 it was the intention of the government to try to determine whether or not the applicant soap company operated at the maximum quota rate of 84 per cent, or at some lower percentage, during the second quarter of 1943.

Manufacturers of liquid, paste and metallic soaps, liquid insecticides

and disinfectants, live stock dips and sprays, floor wax and other sanitary products are now permitted to purchase and use second-hand steel drums, under the terms of amended Order L-197 issued and effective July 14. The only proviso is that the firm must have been a user of steel drums for the same purpose prior to September 14, 1942. Under the terms of the amended order it is no longer necessary to have one's drums returned from distant points when local stocks are available.

Another section of this new steel drum order provides that, effective October 1, 1943, manufacturers of liquid insecticides and disinfectants

will be able to purchase and use new steel drums for the shipment of their products.

The new FDA order on allocation of tallow and grease is expected to be released very shortly. It was said to be scheduled to appear in the July 28 issue of the *Federal Register*, and will be reported elsewhere in this issue if received in time. Another order which may be released shortly will cover the use of extenders in soaps, fixing minimum amounts which soap makers must incorporate in their products. This is part of the government campaign to conserve and extend soap raw materials.

## FDO-42 As Amended

TEXT OF FOOD DISTRIBUTION  
ORDER NO. 42 AS AMENDED  
JULY 10, 1943

RESTRICTIONS ON USE OF  
FATS AND OILS

TITLE 7—AGRICULTURE

CHAPTER XI—WAR FOOD ADMINISTRATION

(Food Distribution Order 42, Amendment No. 1)

Part 1460—Fats and Oils  
RESTRICTIONS ON USE

Food Distribution Order 42 (8F. R. 4147) issued by the Secretary of Agriculture on March 31, 1943, is hereby amended to read as follows:

1460.1 Use of fats and oils

(a) Definitions

(1) "Fats and oils" means all the raw, crude, refined, and pressed fats and oils whether vegetable, animal, fish, or other marine animal, their by products and derivatives, including grease (lard) oil, sulfonated and similarly processed fats and oils, fatty acids, and lard and rendered pork fat, but not including cocoa butter, butter, wool greases, essential oils, tall oil, mineral oils, and vitamin bearing oils derived from fish or other marine animal livers or viscera.

(2) "Person" means any individual, partnership, association, business trust, corporation, or any organized group of persons whether incorporated or not.

(3) "Manufacturer" means any person who uses any fats or oils in the manufacture of any finished product, and shall include all other persons directly controlling or controlled by such person and all persons under direct or indirect common control with such person. The term shall also include a soap converter. Soap converter means any person who uses soap made by others as a raw material, and by addition of

other materials, including, but not limited to, silicates, phosphates, abrasives, borax, corn meal, and soda ash, makes a finished product which is sold for detergent uses. The term "soap converter" shall not include those persons who merely add small amounts of color or perfume to the original soap, or persons who merely dissolve paste or other soaps in water to make liquid soaps without adding other non-soap detergent materials. The term "manufacturer" shall not include any crusher, renderer, refiner, or other processor except as and to the extent that his operations result in the production of a finished product, and also shall not include any person who uses fats and oils in the home in the preparation of food for household consumption. Blending alone shall not constitute a person a manufacturer.

(4) The "inventory" of a manufacturer at any time shall include all fats and oils held or controlled by him and all fats and oils purchased by him for future delivery. The inventory of a soap converter also shall include his supply of unprocessed soap and soap purchased by him for future delivery.

(5) "Finished product" means any product of a manufacturer produced for sale as his finished product and carried on his books as his finished product. Other than for the purposes of paragraph (d) hereof, "finished product" shall not include:

- (i) grease (lard) oil;
- (ii) sulfonated or similarly processed fat or oil;
- (iii) fatty acids
- (iv) lard or rendered pork fat;
- (v) any fat or oil product intended for sale to another manufacturer for further processing in the manufacture of, or for inclusion in,



any product (excepting a product falling within paragraph (a) (5) (vi) hereof;

(vi) any edible product of which a fat or oil is not the principal ingredient;

(vii) any edible product produced by any hotel or restaurant for consumption on the premises;

(viii) any medicinal preparation, including vitamin preparation, other than medicated soap;

(ix) olive oil;

(x) poultry fat; or (xi) soap sold to soap converters for furthering processing.

(6) "Crusher" means any person who presses, expels, or extracts oils from any seed, bean, nut, or corn or other oil-bearing materials.

(7) "Principal ingredient" as used in paragraph (a) (5) (vi) hereof means the largest single ingredient by weight, subject to the qualification that mayonnaise and salad dressing are to be considered products of which a fat or oil is not the principal ingredient regardless of the fat or oil composition thereof in the particular case.

(8) "Soap" means the water soluble product formed by the saponification or neutralization of fats, oils, rosins, or their fatty acids with organic, sodium or potassium bases; or any detergent composition containing such products, including all types of shaving soap and shaving cream. The term does not include, however, soap used for non-detergent purposes or for the processing of textiles. "Non-detergent purposes" means uses in which the function of the soap is not to clean, wash, scour, or remove dirt, grit, grease, or any other foreign material from any surface, material, assembly, part or product.

(9) "Foots" means the by-product residue obtained in the refining of any fat or oil where such refining is accomplished by treatment of such fat or oil with any alkaline material. The term does not include "tank bottoms", catch basins skimmings, recovered fats and oils obtained from bleaching earth, deodorizer distillate, or other fatty residue obtained by a process other than alkali refining.

(10) "Base period use" means the average use during the corresponding calendar quarter of the years 1940 and 1941.

(11) "Director" means the Director of Food Distribution, War Food Administration, or any employee of the War Food Administration designated by such Director.

(b) *Restrictions on manufacture*

(1) No manufacturer, except as provided in paragraph (b) (5) hereof, shall, in any calendar quarter, use or consume any fat or oil in any class of use listed in schedule A, annexed hereto, in a quantity in excess of a quota equal to the percentage specified in such schedule A of his average quarterly use or consumption of fats and oils in such

class of use during the corresponding calendar quarters of the two years, 1940 and 1941. Any manufacturer who manufactured paste water paint, dry casein paint, or dry protein paint, as such, may determine an oil quota on the basis of one pound of oil for each gallon of paste water paint manufactured by him during the base period, and one pound of oil for each eight pounds of dry casein or dry protein paint, as such, manufactured by him during the base period. This oil quota shall only be used by him for the manufacture of paint containing not more than one pound of oil per gallon of paint.

(2) If any manufacturer does not, in any calendar quarter, use or consume the quantity of fat or oil permitted by paragraph (b) (1) hereof, the unused part of his quota for such quarter (beginning with the second quarter of 1943) may, for the purposes of paragraph (b) (1), be carried forward and used only in the succeeding quarter and then only after the regular quota for such quarter has been used.

(3) For the purpose of determining the quantity of raw "foot" which may be used or consumed, use or consumption shall be calculated on the basis of total fatty acid content.

(4) The restrictions on the use or consumption of fats and oils imposed hereby are imposed with respect to the use or consumption of fats and oils in the aggregate, and such restrictions are not to be construed to limit a manufacturer to the use or consumption of the same fat or oil used or consumed by him in the base period.

(5) Nothing in paragraph (b) (1) hereof shall restrict:

(i) The use or consumption of fats and oils in any calendar quarter by any manufacturer, who was using fats or oils prior to July 1, 1943, and whose aggregate use or consumption of fats and oils in such period is less than 6,000 pounds; or the use or consumption of fats and oils in any calendar quarter by any manufacturer, whose use of fats and oils did not start until on or after July 1, 1943, and whose aggregate use or consumption of fats and oils in such period is less than 1,000 pounds.

(ii) The use of fats and oils in the manufacture of any edible product or soap delivered or to be delivered to:

(a) the Army, Navy, Marine Corps, and Coast Guard of the United States;

(b) the Food Distribution Administration, War Food Administration (including, but not restricted to, the Federal Surplus Commodity Corporation); (c) the War Shipping Administration; (d) the Veterans Administration; (e) the Panama Railroad Company; (f) the United States Maritime Commission for use on vessels operated under its control; (g) any contract school or ship operator, as defined in Food Distribution Regulation 2 (8 F.R. 7523); (h) any person using an edible product in the preparation of meals to be served on vessels operated by the United States Maritime Commission; (i) any manufacturer for use in the manufacture of any edible prod-

ucts to be delivered to any of the persons or agencies named in this paragraph (b) (5) (ii); or, (j) any wholesaler or jobber for delivery to any of the persons or agencies named in this paragraph (b) (5) (ii):

*Provided, however,* That deliveries to the persons named in paragraphs (b) (5) (ii) (g), (h), (i), and (j) hereof, shall be non-quota only if supported by a certificate issued to the person having the prime contract with the agencies named in paragraph (b) (5) (ii) (a), (b), (c), (d), (e), and (f) hereof. This certificate shall be issued by the Quartermaster General of the Army, the Chief of the Bureau of Supplies and Accounts or the Chief of Naval Personnel of the Navy, the Commandant of the United States Coast Guard, the Quartermaster of the United States Marines, any duly authorized Army exchange officer, any duly authorized Navy ship's service officer, any duly authorized Marine Corps exchange officer, any duly authorized Coast Guard ship's service officer, the Administrator of the War Shipping Administration, the Administrator of Lend-Lease, the Director of the Veterans Administration, the Chairman of the United States Maritime Commission, the Vice President of the Panama Railroad Company, the Director, or the duly authorized representative of any of them. The certificate shall specify the name of the manufacturer supplying such fats and oils or soap, and shall state that the final products are for direct Army, Navy, Coast Guard, or Marine Corps issue or for sale in post exchanges or ships' service departments, for contract feeding of Army, Navy, Coast Guard, or Marine Corps personnel, for consumption on ships operated under the War Shipping Administration or the Maritime Commission and for use by the Veterans Administration, for consumption in the Panama Canal Zone, for export or shipment to any territory or possession of the United States, or for delivery pursuant to the Act of March 11, 1941, (Lend-Lease Act); and that the delivery or manufacture of such products will require a stated quantity of fats and oils or soap. The prime contractor shall furnish copies of such certificate, certified by him to be true and correct, to the persons from whom he obtains such products, and such certified copies shall be transmitted through trade channels to the manufacturer named thereon.

(iii) The use of fats and oils in the manufacture of all protective coatings, coated fabrics, linoleum, oil-cloth, and felt base floor coverings, delivered or to be delivered to, or used on or incorporated in material and equipment delivered or to be delivered to, the Army, Navy, Marine Corps, or Coast Guard of the United States, the United States Maritime Commission, or to the War Shipping Administration, or delivered pursuant to the Act of March 11, 1941 (Lend-Lease Act): *Provided, however,* That no fats or oils used or delivered pursuant to the terms of this paragraph (b) (5) (iii) by any manufacturer shall be exempt from such manufacturer's quota under the terms of this order unless, on or before the 15th day of the month succeeding

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# *Destruction of Bacteria in the* COMMERCIAL LAUNDRY

*By Lloyd W. Wright*

*Philadelphia Quartz Co.*

HIDING in every war-torn European country today is an assassin more deadly than all the armies, an assassin that has demolished whole civilizations. His name? Pestilence. The most fertile field for his operations? War-torn countries. With World War (Part II) engulfing the globe, we may well ask—"Will a new disease result from this war?" It is not too early to prepare for and strangle such a possibility, and in our preparations the commercial laundry plays a very important role.

Cleanliness, besides being essential to personal comfort, takes on, in wartime, an even greater significance. Workers, constantly exposed to skin irritants and sensitizing agents which soil their clothing, must be protected from industrial skin diseases resulting from this exposure. To illustrate, manufacturers of TNT have a pressing problem to protect their employees from painful "dermatitis." The handling of TNT offers hazards other than explosive. Clothing worn by workers must be laundered after every wearing, and the plant must assume this responsibility. A new method of washing this clothing has been developed, using a silicated alkali, and is recommended to the TNT industry.<sup>1</sup> Another wartime task, one which we hope will never be necessary in the United States, is the job devolving on laundries in the event of poison gas attacks. The decontamination of clothing would have to be carried out by the laundries, and many are preparing themselves for the job.

Little wonder, then, that the laundry has assumed even greater im-

portance today. In addition to the normal family, professional and industrial requirements, the laundry has the heavy burden of transient and military washing. With each heaped-up demand comes the absolute necessity for sanitary washing. Public health in the 20th Century depends to a great extent on such service, just as it does on pure drinking water, pure food, and good housing. It is simply another detail in the pattern of public welfare.

Modern laundering is an enormous job. True, the chief task has been to get clothes clean safely. Linked with this is the tacit understanding that the clean clothes need to be bacteria-free. Simple? Not when we realize just what types of bacteria turn up in a load of dirty clothes. While there is a ban on laundries accepting clothes from homes in which there is contagion, precautions must be taken as though such a law did not exist. Should an epidemic flare up, it might be necessary to waive this restriction, and recommendations have already been made by laundry technicians on the handling and treatment of such contaminated clothing. Hospital laundries have this ever-present menace to combat. Here are some of the more virulent diseases and maladies which spell contagion:

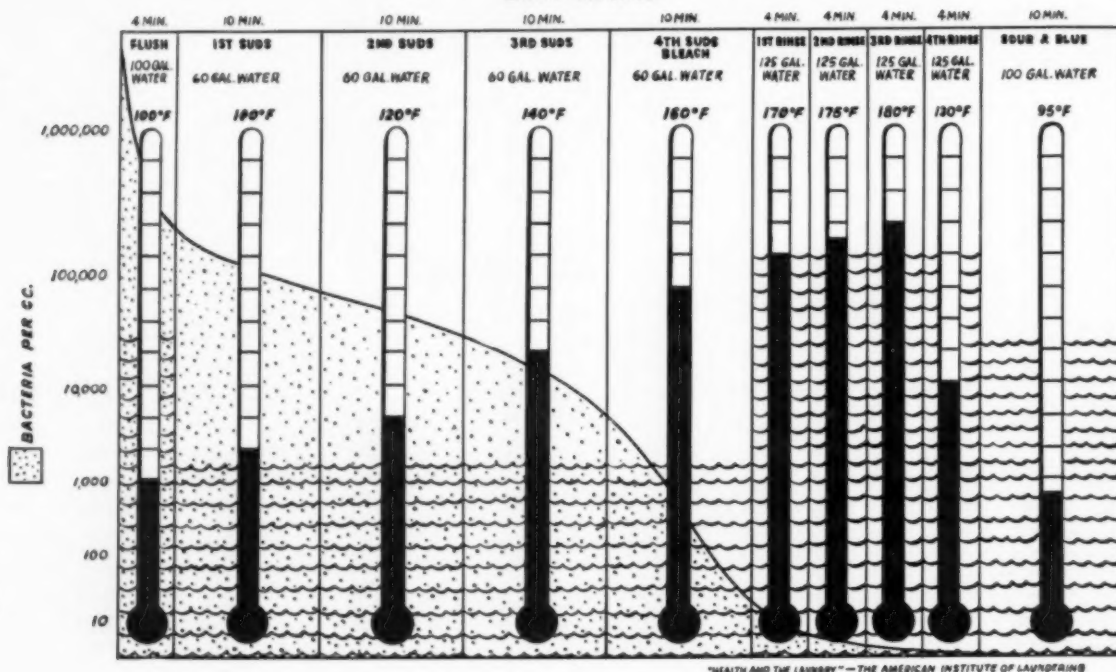
Pneumonia  
Typhus  
Tuberculosis  
Gonorrhea  
Streptococcic infections  
Staphylococcic infections  
(Boils and abscesses)

How, then, does a commercial or institutional laundry proceed in the destruction of bacteria brought to it on towels, sheets, shirts, etc.? The laun-

dry has many positive and effective tools to destroy these seeds of pestilence; the tools are pretty well bundled up in what we call the "wash-room formula." Most laundries use standard formulas, with, of course, variations to accommodate local conditions and needs. This standardization is due largely to the research and recommendations of technical experts in and out of the industry over a period of years. Back in 1935 the American Institute of Laundering made a bacteriological survey of home and commercial laundering, chiefly to discover the most perfect method of laundering. The findings were published in the now famous booklet, "Health and the Laundry." Of course, the commercial laundry came out a good first. However, our present interest lies in the methods used by commercial laundries in sterilizing clothes, and the results obtained thereby. Let's examine the bacteria-destroying agents used by all good laundry formulas.

**WATER:** Of all the washing implements at the disposal of a laundry, water is the star performer. Most plants are generous in its use, some furnishing as high as 12 complete changes of soft water in washing a 300-pound load of clothes. Laundries are equipped to fill and empty washers quickly and automatically and do not re-use water (which is a common practice in homes). This frequent and prolonged flushing action removes many bacteria, leaving a minimum to be killed by other methods. A glance at the accompanying graph will show that the downward procession of the bac-

## PROGRESSIVE DESTRUCTION OF BACTERIA BY A SCIENTIFIC LAUNDRY FORMULA WHITE CLOTHES



teria count begins sharply, during the first flush, and descends throughout each operation. Practical sterilization results in the last rinse. Bacteria removal is naturally facilitated by the large quantity of water used plus the accompanying agitation. While the removal is proceeding, the high and controlled temperature of the water is also destroying bacteria. This combined attack on germs is unremitting throughout the entire washing cycle. Further facts and figures are detailed in the paragraph on "Temperature."

**SOAP:** is another laundry supply which aids in bacteria disposal. Bacteria, loosened from clothes and dispersed in hot water, are suspended by soap which thus provides a vehicle to carry germs away from the washer. Soap is considered to possess more qualifications for perfect detergency than any other single material. It is helped in this action by the alkali soap builders discussed in the following paragraph.

**ALKALI:** The germicidal power of alkalis in concentrated solutions is well known. Of the alkalis, the silicates have been shown to possess the

greatest bactericidal action, other than caustic. At the concentrations commonly used in the laundry, alkali's chief role is the removal of the bacteria-laden dirt. Mixtures of soap and soluble silicates have even greater detergent action than soap alone.

Alkali, when properly used, goes to work in the very first operation, the break, and stays on the job until the dirt is removed. Combined with soap, alkali pries loose all solid dirt and suspends it in the wash solution, thus permitting the dirt to be rinsed away easily; with the dirt goes much of the bacteria. When silicated alkalis are used, dirt suspension is thorough and redeposition of dirt on the fabric does not occur. Nearly all laundries today use alkalis containing more or less colloidal silicate, which definitely contributes to cleaner and more sanitary clothes.

**BLEACH:** This operation in a laundry formula may, perhaps, be classed as one of the most positive and powerful destroyers of bacteria. Laundries use therapeutic amounts of bleach in the operation, and observations made clearly indicate that the bleach ex-

hibits its germ-killing power for most of the 10 minutes assigned to this operation. You will note, on the graph, the sudden drop of the bacteria count during the fourth Suds-Bleach operation. Next to the break, where most of the bacteria are removed, the bleach accounts for the greatest drop in the bacteria count.

**SOUR:** After a load of clothes has been washed, many bacteria have been killed by heat and bleach, many more removed by flushing and detergent action, and the remainder subjected to five or six rinses which reduce the number by successive dilutions, so that the linen is left in a sanitary condition. Laundry souring, (a process not used in home laundering), adds one more germicidal feature to the commercial laundry formula. Souring to a low pH of 4.5 to 5 destroys bacteria present in the clothes by coagulating the living substance inside these germs.<sup>2</sup> Thus the commercial laundry formula furnishes clean linen, which is not, in itself, conducive to bacteria colonization. In a series of studies it was shown that souring furnished an extremely high degree of

efficiency in bacterial count reduction without bleach.<sup>3</sup> Souring takes on added importance in colored loads (dark or light) where high water temperatures and bleach are not used.

**TEMPERATURE:** High, sustained temperatures are necessary to fast dirt removal as well as to sterility. Pasteurization of milk is performed by heating at temperatures of 135° to 145° F. for 30 minutes. When we consider this, and then learn that laundries use pasteurizing—and even higher—temperatures for as long 50 minutes, we are convinced of the bacteria-destruction of a laundry formula. With colored loads, temperatures are much lower and the final bacteria plate counts, therefore higher. This is not alarming, however, since the bacteria counts are so negligible as to have no sanitary significance.

Heat is provided in the formula by hot water, and later in the finishing processes by the steam press and ironer. Laundries use thousands of gallons of hot water, varying in temperature from 100° to 190° F. Laundry formulae

furnish these high temperatures for periods of time varying from 30 to 70 minutes. The higher temperatures, of course, are used only on white work. However, white work accounts for 50 per cent and more of the laundry load, hospitals running closer to 100 per cent. Presses and ironers cap the climax with their elevated temperatures, which no bacterium survives. The American Institute of Laundering has shown that a boiler pressure of 100 pounds gives a surface temperature on a steam press of 338° F., which destroys bacteria in one minute. The A.I.L. also showed that sheets passed through a six-roll flatwork ironer for 45 seconds are similarly sterilized. Likewise, in the laundry tumbler, where hundreds of cubic feet of thermostatically heated fresh air pass through woolens and linens, bacteria is destroyed within a period of 25 minutes. Thus, we see that any bacteria hardy enough to survive the laundry's washing formula certainly cannot outlast ironing.

Now that we know the actual performance of heat in the laundry,

let's take a look at the fate of the disease-bearing bacteria at these temperatures:

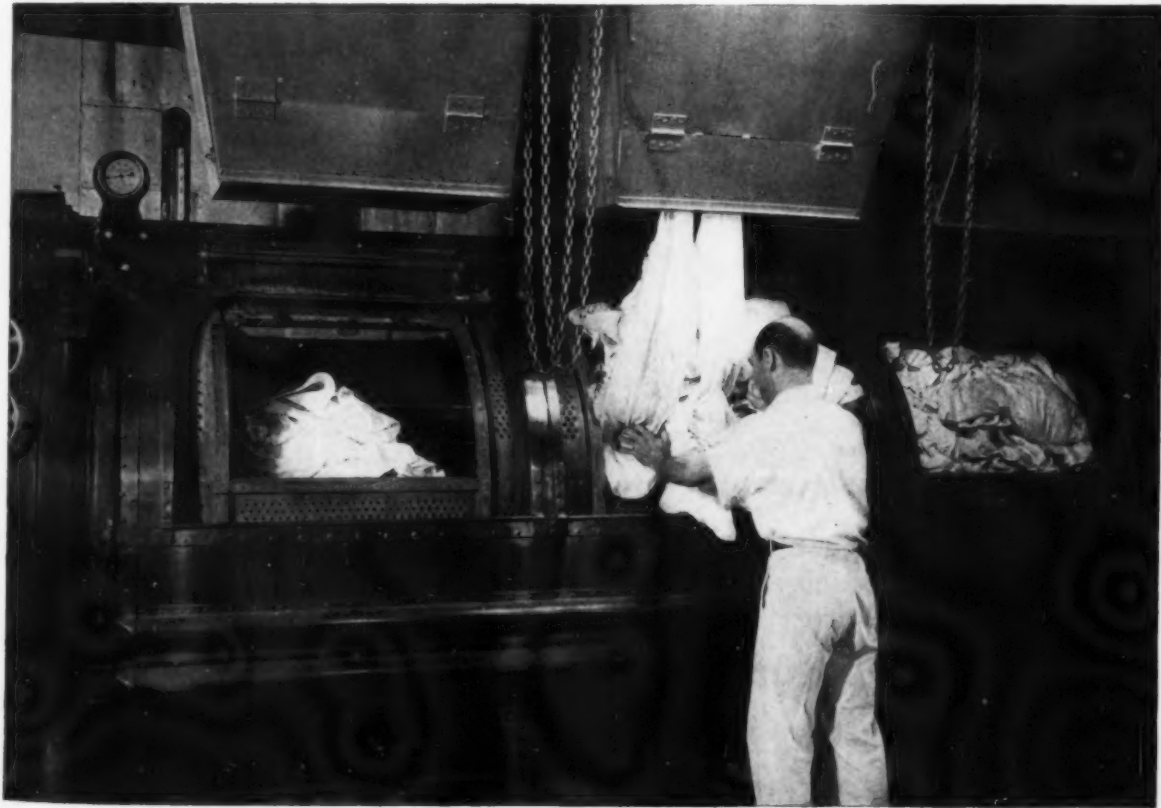
Pneumonia bacteria die at.....	216°F.
Typhus bacteria die at.....	133°F.
Tuberculosis bacteria die at....	140°F.
Gonorrhea bacteria die at.....	140°F.
Streptococcic bacteria die at..	130°F.
Staphylococcic bacteria die at .....	137-144°F.

The progressive destruction and removal of bacteria by the modern laundry formula is visualized in the accompanying chart. Each operation in a scientific formula exerts a prophylactic action. In passing, we might remark on the comparison of home versus commercial laundering, as charted by the American Institute of Laundering in its survey. The average bacteria count, including both white and colored work, in the last rinse water lined up as follows:

Commercial laundries..	31-71 per c.c.
Home laundering .....	318,792 per c.c.

The laundry, commercial and institutional, then, contributes heavily to the preservation of the health of this nation through efficient laundering.

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# TURNER

**CAUSTIC SODA**

**PERSULPHATE OF POTASH**

**PERSULPHATE OF AMMONIA**



## JOSEPH TURNER & COMPANY

**RIDGEFIELD, NEW JERSEY**

83 Exchange Place, Providence

40th St. and Calumet Ave., Chicago



# NEWS

## FDA Soap Division Moves

The Soap and Glycerine Division and the Fats and Oils Branch of the Food Distribution Administration moved July 10 to new quarters in the South Agriculture Building, Washington, D. C. Offices of Messrs. Prindle, Lenth, King, and McConlogue are now located in the new quarters.

## Summarize Soap Statistics

An interesting compilation of vital statistics affecting the soap industry is included in a study recently completed by the United States Department of Labor, Wage and Hour Public Contracts Division, New York. Reviewing some of the economic factors relating to the establishment of minimum wages in the industry, the report reviews wage, hour and sales figures on 264 establishments in the soap industry. The four largest producers employed 10,795 persons (in 1935) 63.3 per cent of the total number of workers in the industry. Their production was valued at \$175,870,000 or 73.5 per cent of total industry output. Additional statistics were shown giving number of soap plants and number of wage earners in each state, number of wage earners by size of establishments, average wage rates, etc.

## Henry M. Robinson Dies at 75

Henry Manning Robinson, 75, vice-president of Enoch Morgan Sons, Co., soap manufacturers with offices at 439 West Street, New York, died July 18, at Mountinside Hospital, Montclair, N. J., after an illness of eight weeks. Mr. Robinson, who had been with Enoch Morgan for more than fifty years, had planned to retire some time ago, but continued on the job because of the war. For the past

year he had been living with his son, Walton S. Robinson, in Westfield, N. J. For more than forty years previously



HENRY M. ROBINSON

he had made his home in Montclair, N. J., where he had been active in civic affairs, serving as a municipal official and a member of the board of education. He was a member of Montclair Golf Club and of Echo Lake Country Club. His wife, Mrs. Sara Simmons Robinson, died five years ago. Besides his son, Mr. Robinson leaves one grandchild.

## Should Read F.D.O. 53

An error which appeared in the advertisement of Emery Industries, Inc., Cincinnati, in the July issue of *Soap & Sanitary Chemicals*, is corrected in a communication from N. A. Ruston, general sales manager, for Emery. A paragraph in the advertisement stated as follows: "P. S. . . Allocation under FDO 63, governing purchase of animal oil, neat's-foot oil and red oil became operative July 1." Mr. Ruston points out that this should have read: ". . . Allocation under FDO 53 . . ."—and not FDO 63.

## Campaign Boosts Fat Salvage

The efforts of Akron Soap Co. to stimulate collection of waste kitchen fat in the Akron, Ohio, district were described in a picture article in the July issue of *Soap and Sanitary Chemicals*. That the campaign achieved worthwhile results is amply proved by fat collection totals for the months of May and June just reported to us by Don M. Pfeiffer of Akron Soap. Their June receipts of kitchen grease were 23% higher than May, which month was itself 32% higher than the receipts for April.

## Coombs Now Jelke Adv. Mgr.

J. Edward Coombs, formerly associated with Procter & Gamble Co., in charge of advertising and promotion of several P. & G. brands, has been appointed to the post of advertising manager of the John F. Jelke Co.

## Harold V. McGann Joins Shulton

Harold V. McGann has joined the sales staff of Shulton Inc., makers of Early American Old Spice and Friendship's Garden toiletries. He will cover the Long Island and Brooklyn territory formerly covered by Herman J. Williams, now on leave of absence and serving in the U. S. Army.

## Eugene Schuck Dies in L. A.

Eugene Schuck, 65, for the past six years chief chemist and general manager of Miller Soap Co., Los Angeles, died at his home there, July 10. Mr. Schuck was well known as a consulting engineer for many soap manufacturing plants in the United States, Europe and South America. He is survived by his widow, a son, Eugene Schuck, Jr., and a daughter, Mrs. Marcelle Guziel.

# TECHNICAL SPECIALTIES

**M**ORE and more, the application of odoriferous principles as a means of neutralizing or "blanketing" the unpleasant and sometimes offensive odors which characterize certain commercial products is becoming a merchandising factor of measurable consequence. Obviously this use of aromatics in so-called technical products differs from their use in perfumery in that the problem is *not* one of creating an aesthetic appeal, necessarily, but rather one of modifying an undesirable quality. And since the profit margin on most technical preparations is small, a major consideration in the selection of a deodorant is its economical coverage of the product's objectionable character. This must be as complete and as pleasant as possible and without interference with the operation or purpose for which the product is intended.

It has been found that certain of the cheaper or stronger essential oils — or their imitations, and sometimes even straight aromatic chemicals, fulfill this purpose quite effectively. But after years of research and cooperation with the manufacturers of many of our country's leading technical products, the conclusion seems well established that no single oil or chemical will give as complete and satisfactory coverage per dollar spent as will a compound designed specifically for a definite technical use. For this reason, the manufacturer's best procedure before adopting any one masking or odorizing agent is to have his product subjected to careful laboratory observation in order to determine the most effective and least costly means of accomplishing the desired results. Every product represents a separate and distinct problem and should be treated as such.

The accompanying list of Technical Specialties suggests but a few of the many possible products and applications wherein the neutralization or re-odorization of unpleasant odor effects is being achieved economically through the use of specially prepared, low cost aromatic compounds.

## GENERAL DEODORANTS

BOUQUET #149 .....	A sweet, strong vanilla type.
DEODORANT #9 .....	A powerful, diffusive, covering agent.
JAVOLLAL .....	An effective substitute for citronella. Imparts a cleaner, finer, more appealing odor to insecticides, disinfectants and technical mixtures.
NEUTROLEUM ALPHA....	These are among the most widely used deodorizing materials. They neutralize and perfume at very low cost. Also useful in all preparations based upon petroleum distillates.
NEUTROLEUM GAMMA....	
SAFRELLA .....	This is a low priced substitute for artificial sassafras which it resembles closely in odor and strength. It is used in insecticides, germicides and numerous other technical mixtures.

## SPRAY DEODORANTS

The following deodorants effectively cover the objectionable odor of the toxicant as well as of the base material. They are highly soluble and can be used alone where a mildly scented or practically neutral odor is desired, or in conjunction with a perfume.

DEODORANT #11 .....	Vanilla type.
DEODORANT #P-36 .....	A sweet, powerful lilac complex, especially for sprays based upon Lethane 384 Special.
DEODORANT #P-38 .....	Diffusive, pleasant jasmine character.
DEODORANT #P-40 .....	Orange blossom type.
DEODORANT #P-41 .....	A lily complex.
DEODORANT #P-43 .....	A fruity, jasmine type.
DEODORANT #62 .....	A technical bouquet, possessing clean, refreshing, lasting odor. Provides good coverage.
THANITE DEODORANT #59	These are very effective covering agents. They provide an odor neutralizing effect upon the toxicant, especially Thanite. #59 is a bouquet effect, slightly oriental; #60 is a floral bouquet; #61 is a clean, "neutral" type.
THANITE DEODORANT #60	
THANITE DEODORANT #61	

## SPRAY PERFUMES

These compositions are especially designed to give the utmost coverage and to lend to the product a fragrant, appealing note. All are soluble, highly concentrated blends.

BOUQUET #301 .....	A sweet, spicy bouquet of clean, refreshing character.
CEDAR #5 .....	Very popular cedar-pine effect.
HONEYSUCKLE #15 .....	A full, deep honeysuckle note.
INDIAN HAY #6.....	A sweet, spicy composition carrying a grasslike note.
KASMA #8 .....	A lavender-geranium-petitgrain blend.
LAVENDER #29 .....	A distinct lavender type; gives very effective coverage.
LILAC #28 .....	This composition has appealing tonality and provides excellent coverage.
LILY #20 .....	A fragrant, refreshing note.
MINT #5 .....	Fresh, minty character.
NEW MOWN HAY #7.....	A pleasant, new mown hay effect.
PINE #14 .....	Straight pine type; has a pungent odor.
ROSE #64 .....	Good odor value; economical in use.
SWEET CLOVER #5.....	This unique composition affords excellent coverage. Has a clean topnote.
SWEET PEA #19.....	A good, practical odor effect for sprays.
VIOLET #22 .....	Imparts a distinct and characteristic note.

## OTHER APPLICATIONS

We are prepared to consult with and recommend or develop masking agents and re-odorants for numerous other products, such as:

CLEANING FLUIDS and NAPHTHAS, CUTTING OILS, FUEL and LUBRICATING OILS, LATEX, NATURAL and SYNTHETIC RUBBER PRODUCTS, LEATHER, PARA BLOCKS, PAINTS and LACQUERS, PLASTICS, PRINTING INKS, STARCHES, TAPE, PASTE or GLUE, TEXTILES, WAXES, POLISHES and SHOE POLISHES, etc.



**FRITZSCHE BROTHERS, Inc.**

PORT AUTHORITY COMMERCE BLDG., 74 NINTH AVENUE, NEW YORK, N. Y.  
BOSTON CHICAGO LOS ANGELES ST. LOUIS TORONTO, CANADA MEXICO, D.F.  
FACTORIES AT CLIFTON, N. J. AND SEILLANS (VARE) FRANCE

### Chicago Soap Assn. Golf

Heavy rains on the preceding day forced abandonment of the July golf tournament at Evanston Country Club, arranged by the golf auxiliary of the Chicago Drug and Chemical Club and the Chicago Soap, Perfumery and Extract Association. Hastily improvised arrangements were made for the playing of numerous foursomes at nearby courses not so badly flooded, and in the evening the party, numbering sixty, returned to the Evanston Club for dinner and cards. Door prizes were awarded to the guest of honor, Lou Fonseca, noted baseball star, and to the following club members: E. L. Drach, P. E. Calo, Bob Coleman, M. B. Vance, W. R. Nay, Herbert Kohn, Bruce Puffer, H. S. Glover, Carl Edwards, W. B. Hendrey.

The July tournament will be re-scheduled in September, according to pending plans but meanwhile the co-chairmen of the golf committee, Jos. Gauer of Fritzsche Bros., and Martin B. Vance of Givaudan-Delawanna, Inc., are preparing for the next golf meet, a two-day affair at Olympia Fields Club on August 20 and 21.

Russ Brown of Roure Dupont, Inc., won the class A low net award in the June tournament, held at Itasca Country Club. Al Nelson of Firmenich & Co. was the winner in class B, Bob Sandke of L. Sonneborn Sons in class C and Joe Gauer of Fritzsche Bros. in class D. W. N. (Shorty) Wyatt of Westvaco Chlorine Products Co. won the guest award.

### Tighten Soap Wrap Restrictions

Further restrictions on the use of glassine, greaseproof and vegetable parchment papers as wrappers for soaps have been added under WPB's latest amendment to M-286, issued July 23. Formerly such wraps were allowable when "laminated to the body of a container" for soaps, cosmetics, dentifrices, and other toilet articles. This exemption has now been cancelled, although stocks in the hands of a user as of July 23, in transit to him, or so cut, processed or printed as to be otherwise useless, may still be used up. The restrictions of course do not apply on sales to Army,

Navy, certain other government agencies, or lend-lease sales.

### SOAP FORMULATION PROBLEMS

The practical soap boiler has been up against an increasingly serious set of problems over recent months, faced by the necessity of varying his formulas to fit in with the changed situation on fat and oil supplies. How has he met these problems and what sort of a usable cake of soap has he been able to make? Answers by a practical soap maker in an article scheduled for an early issue.

### Boston Bims "Picnic" Indoors

Something new in the way of an "indoor outing" was staged Thursday, July 22, by the BIMS of Boston at the University Club of that city. The unique "outing" was held to replace a regular golf tournament which was called off on account of the pleasure driving ban. By coincidence, the day chosen for the indoor picnic was wet and stormy in Boston, so instead of getting wet playing golf, those who attended stayed dry,—or at least comparatively so,—while engaging in bowling, badminton, swimming, squash, billiards, and America's favorite, poker. In the evening a dinner was served at which the prizes were presented by Pete Niles of Fritzsche Brothers, Inc., chairman, who presided. Practically the entire Boston BIMS chapter attended the "outing" as well as several representatives from New York. Prize winners included William Ackley, Jack Nielson, Pete Niles, and Ed Handschumacher. Driving permitting, a regular golf tournament will be held in the fall.

### AOCS to Meet in Chicago

The fall convention of the American Oil Chemists Society will be held in the Palmer House, Chicago, October 6, 7 and 8. Dr. J. J. Voltertsen of Armour & Co. is chairman of the local committee, and Dr. J. K. Gunther of Swift & Co. is chairman of the program committee.

### Grease Production Average Down

Recovery of lard and grease from hog slaughtering by government inspected packers amounted to 762,832,000 lbs. for the first five months of 1943, according to government figures recently released. This was an increase of only approximately 37,000,000 lbs. from the comparable 1942 period, in spite of the fact that the 1943 hog slaughter was the largest on record, and the average weight per hog was greater than ever before. Live weight of hogs in the 1943 period averaged 253 lbs., as compared with 237 lbs. last year, yet this year only 31½ lbs. of fat were recovered per hog as compared with 32½ lbs. from the lighter 1942 stock. Chicago stockyard authorities estimate that an additional 165,000,000 lbs. of fats could have been taken off at the processing plants by closer trimming, but point out that government has not placed a high enough price on grease to encourage recovery in this direction. Instead most meat cuts have been carrying excessive quantities of fats, sold to the consumer at meat prices. OPA meat cutting regulations designed to prevent the sale of excess fat on meat, were announced several weeks ago. They are now in effect and may serve in some measure to counteract this tendency.

### Issue Oil, Fat Study

A study of the world-wide market background on fats and oils has just been published by the Food Research Institute, Stanford University, California. The author of the booklet is Dr. Karl Brandt. His booklet is understood to review world fat stocks and to report on the various methods that have been tried by different countries to solve their fat deficiencies. Copies of the second printing will shortly be available for distribution.

### Kessler Chemical Moves

Kessler Chemical Co., producers of fatty acids and chemicals, recently moved its offices and plant from Delaware and Mifflin Street to State Road and Cottman Avenue, Philadelphia.



#### T. J. Schmidt, C-P-P Man, Dies

Theodore J. Schmidt, 58, an industrial salesman, covering the hotel trade in the metropolitan New York area for Colgate-Palmolive-Peet Co., Jersey City, N. J., died July 21, in Midwood Hospital, Brooklyn, following an operation from which he was thought to have recovered successfully. Mr. Schmidt was hired 27 years ago by E. H. Little, then a New York district manager for the Palmolive Company, and now president of Colgate-Palmolive-Peet. He worked in various capacities for the company in different territories of the United States, recently devoting all his efforts to the hotel trade. Mr. Schmidt, who made his home in Brooklyn, was married but had no children. He is survived by his wife and three sisters. Funeral services were held in St. Paul's Episcopal Church of Flatbush, Brooklyn, July 23.

#### British Soap Firms Shut Down

Orders to cease production have recently been issued to twenty-seven British soap firms, we are advised in a recent communication from *Soap's* British representative. So far only four firms are understood to have complied with the order and have transferred their production to other factories. It has not yet been determined whether the other twenty-three firms will take similar action, or whether they will suspend activities entirely.

#### Must File Fat, Oil Data

The War Food Administration has just announced that all persons subject to fat and oil quota restrictions under FDO-42 were required to file before July 31 reports on their consumption of fats and oils in each quarter of 1940 and 1941. The reports were to have been made on Form FDO-42-1 and filed with the Chief, Fats and Oils Branch, FDA, Washington, D. C.

Companies that filed reports prior to the July 10 amendment of FDO-42 should examine the data they submitted to be sure that the figures given are correct in the light of the latest amendment and exemptions. If

a report already filed does not give the correct picture according to the latest amendments, FDA recommends that an amended report be filed. Copies of the form may be obtained from the following FDA regional offices: Atlanta, Ga.—Western Union Building; Chicago, Ill.—5 South Wabash Ave.; Dallas, Texas—425 Wilson Building; Denver, Colo.—Burns Vault Building; Des Moines (7), Iowa—Old Colony Building; New York (7), N. Y.—150 Broadway; San Francisco, Calif.—821 Market Street.

#### J. L. MacIver Dies at 49

John Lachlan MacIver, 49, general sales manager for United Drug Co., Boston, died July 23, after a brief illness. Funeral services were held at St. Mary's Episcopal Church, Newton, Lower Falls, Mass. Mr. MacIver, who had been with the company since 1919, was a native of Michigan, becoming a registered pharmacist in 1915. His first position with United Drug was as a salesman. In 1930 he was appointed district manager and became sales manager in 1941.

#### C-P-P Post-War Plans

The first intimation of how one soap company is preparing for the post-war period was revealed for the first time in an article published recently dealing with the activities and post-war plans of Colgate-Palmolive-Peet Co., Jersey City, N. J. Based on the assumption of E. H. Little, Colgate's president, that the European end of the war will be over by this fall, plans have been laid for the construction of at least one new production unit. Appraisal of existing products, packages, contents and public appeal by departmental heads, forming planning committees, indicates product changes and the introduction of new products in the post-war era as soon as feasible. Because no post-war plant conversion is necessary, as in any plants doing government war work, the problem of the soap maker will be that much lighter in the years immediately following the cessation of hostilities. However, a thorough review of the company's financial standing and capital needs has been undertaken to assure the cash which post-war projects will need.

## Soap Executive on Soap Rationing

THE following letter addressed by an unnamed soap executive to the editor of a publication who had asked him for some comments on the possible imposition of national soap rationing seems to us to be particularly well reasoned and phrased. It gives a good picture of the current situation and summarizes well the case against misinformed and dangerous newspaper comment on this currently much debated subject.

#### Copy of a Letter As to Articles on Whether Soap Is to Be Rationed

"We . . . are very sorry indeed to see that your people have given any space to the question as to whether or not soap is to be rationed. Aside from the fact that the situation is not as you have given it in your memorandum, it would seem to us that during a time when all of us try to

avoid passing on disturbing rumors, the inclusion of such a statement is of questionable soundness from a policy standpoint.

"The loose talk which has been going on for some weeks about the possibility of soap rationing has been extremely harmful to the economy of the country in that it has caused women to buy unnecessary amounts of soap and has accelerated a situation which, in the interests of patriotism, should have been quieted.

"There is no reason why soap should be rationed if more and more housewives continue to save every teaspoonful of waste kitchen fat and if steps of the sort which are now being taken in increasing numbers by Washington, to release for the soap kettle sufficient quantities of available fats, are continued.

"At such a juncture, therefore, statements about the possibility of rationing which excite people and make them buy unnecessary quantities of soap can upset conditions and make it more difficult to work the matter out without hardship to the public."





## "The Red Man's Fact.."

For centuries before the discovery of America, Niagara Falls was the crossroads of Indian trade routes and the subject of many primitive myths and legends. Later these came to be called "the red man's fact and the white man's fancy."

Today, Niagara is the hub of vastly greater trade routes and the source of power more fantastic in fact than anything ever dreamed in the red man's fancy. For it is the center of a huge electro-chemical industry from which America derives much of its strength.

As an integral part of this industry Niagara Alkali has upheld the traditions of Niagara by pioneering chemical products and methods of applying them to new uses. And now that America is at war, this pioneering activity is proving its value in many concrete ways in the production and processing of vital supplies to the armed forces.

CAUSTIC POTASH • CAUSTIC SODA • PARADICHLOROBENZENE • CARBONATE OF POTASH • LIQUID CHLORINE

An Essential Part Of  
America's Great Chemical  
Enterprise



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## Exhibit Soaps at Toiletries Show

THE second annual toilet goods trade show of the Chicago Associated Toiletries Salesmen, held at the Palmer House, Chicago, July 12 to 17, produced "plenty of business" for soap manufacturers and others who participated, officials of the organization reported. Because of WPB restrictions on annual output, soap salesmen found themselves in the peculiar position of "trying not to take too many orders too far ahead," as one company's representative put it.

Over seventy exhibitors of soaps, perfumes and cosmetics occupied space in the hotel's seventh floor, making the event considerably larger than the Chicago organization's first show a year ago. Displays were somewhat restricted, however. Many familiar lines of toilet soaps have of course been reduced as to variety of sizes and odors, or completely discontinued. New package designs were noticeably absent from the displays and new products were not numerous.

The Allen B. Wrisley Co.'s exhibit included a display of a new soybean oil shampoo, placed on the market last March. Production of another new product, the Chicago company's soybean castile bar, which was introduced at last year's show, has, however, been temporarily suspended, it was stated. The Wrisley "Bath Superbe" line in six fragrances, along with bath bubbles and pine bath oil, "Saddle Club" shaving sets and other items were attractively displayed. Staffing the exhibit were A. R. Kopan, P. E. Litkowski, Karl Mayer and H. W. Mundt.

Lightfoot, Schultz Co. concentrated their promotional effort on "Ariderma," a new formula soap for dry skins, but the customary showing of the famous novelty gift line was absent. Bert Lazerwitz, Chicago sales manager, was in charge.

Hewitt Soap Co., Dayton, O., made a representative showing of their "Hewitt Quality" line of toilet soaps, including many familiar brands and

a few novelties. A large display was also made of their giant shower bar with "non-skid" grip. Harold B. Stoner, vice president in charge of sales, and M. E. Gleason, from the Dayton office, had charge.

Luxor, Ltd., displayed toilet soap in various series of sizes and odors, bubble bath, cologne and cosmetic products, with Vincent Allen, Chicago, and C. L. Kelly, Detroit, in charge.

Shulton, Inc., had a display of brushless shaving cream, showerbath balls and toilet soaps in their "Early American" and "All Spice" lines. On their sales staff were J. Ralph Carney, James L. Luse, Fred F. Frasier and W. J. Guindon.

The House of Tre-Jur, Inc., featured a large showing of their "Fun-E-Scope" line of novelty soaps in many designs, aimed at the juvenile market, but which, it was stated, are proving popular as collectors' items among hobbyists. Shower soaps with rope attached, a men's line, ladies sets, bubble foam and other items were also shown. In charge were Roscoe S. Diltz and Harold Salins.

Babs Creations, Inc., offered a "Wood Nymph" ensemble of bath accessories, which included a pine scented bubble bath product.

The House For Men offered complimentary samples of their "His" soap for men and promoted, also, brushless creams and after shave lotions. Elmer J. Engel and Fred Stinson in charge.

Alfred D. McKelvy Co. played up their "Seaforth" line of men's soaps and accessories, with H. C. Richardson, sales manager, New York, in charge, assisted by V. I. Mora, Chicago representative.

Among other exhibitors whose displays included private brand soap products were Cosmetiques Tussy, Daggett & Ramsdell, Bourjois, and Milkmaid, Inc.

Magitex Co., Boston, had on display a bubble bath shampoo for

cats and dogs. Also shown was a cleaning preparation for removing stains and odors left by household pets on carpets and upholstery, while a third item shown was a preparation for spraying on female dogs to protect them from annoyance by male dogs. The company's principal product, "Forest Mist," a balsam spray, was featured, with H. B. W. Snelling, vice president, in charge.

### Fat Collections at New High

Total collections of waste kitchen fats reached almost eight million pounds in May, 1943, the highest figure for any month since the drive started. Total monthly collections since the start of the campaign are listed below:

Month	Collections lbs.
1942	
August .....	3,016,338
September .....	3,812,728
October .....	4,821,160
November .....	4,718,155
December .....	5,098,846
1943	
January .....	5,976,963
February .....	6,972,029
March .....	7,335,997
April .....	7,327,133
May .....	7,959,269

### Restrict British Soap Odors

New restrictions on the number of essential oils available to British soap manufacturers for perfuming of their soaps have recently been issued by the British Government. Use of perfuming materials is strictly controlled in war-time England and all use of essential oils is covered by license. Soap makers were previously allowed a choice of 35 of some 70 available essential oils. They have now, as a result of the new restrictions, been reduced to only eleven oils from which to select.

### Edlund Heads Trade Assn. Group

Roscoe C. Edlund, manager of the Association of American Soap & Glycerine Producers, Inc., has been named secretary and treasurer of the Trade Association Executives in New York City.

C<sub>13</sub> H<sub>20</sub>  
 SUBSTITUTES  
 FOR  
 SUBSTITUTES  
 C<sub>9</sub> H<sub>6</sub> O<sub>2</sub>

There was a time when life for the research chemist was comparatively simple. He'd create a new formula for grateful clients, or aid in bringing costs down by suggesting a change in basic ingredients. However, that was all — in what seems — the long ago.

Today, he is a much harassed man.

Not only are vital ingredients denied him — unavailable or price prohibitive — but the substitutes that he so painstakingly created to take their place, have themselves been placed on shortage or priority listings. Today, he must concentrate the full measure of his skill in the creation of *Substitutes for Substitutes*.

Many manufacturers, fighting to keep production moving, have turned to us with their problems. We have, in most cases, been able to supply the necessary help. Our research chemists have, for more than a quarter of a century, made the Florasynth name a byword in the industry, for the creation of effective and successful synthetics. So much so, that our reproductions of natural floral absolutes and true essences have long been accepted as *primary essentials* in the manufacture of countless successful perfumes, lotions and other toiletries.

★★★ FOR VICTORY BUY U. S. WAR BONDS AND STAMPS ★★★

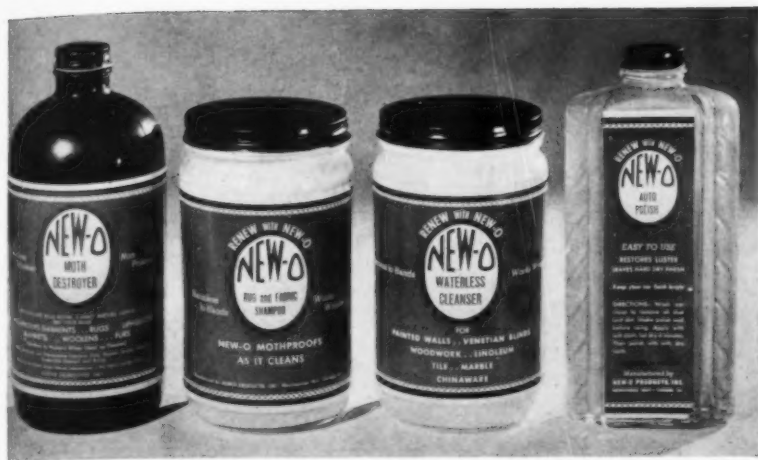
  
*Florasynth* LABORATORIES, INC.

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FLORASYNTH LABS. (CANADA) LTD.—MONTREAL • TORONTO • VANCOUVER • WINNIPEG FLORASYNTH LABORATORIES DE MEXICO S. A.—MEXICO CITY





### New-O Adds Rug Shampoo

New-O Products, Inc., Chicago, has announced a new rug and fabric shampoo which, in addition to cleansing and restorative abilities, is said to possess moth-repellant properties as well. Backed by a Lloyd's of London guarantee policy on the moth-protection claim, the concentrated shampoo is packaged in ½- and 1-pound jars, retailing at 59c and 98c respectively.

New-O Products, Inc., was organized late last year and last January began production of household chemical specialties, including furni-

ture polish, auto polish, glass cleaner, waterless cleaner, liquid floor wax, moth destroyer, insecticide spray and the latest new rug and fabric shampoo. Dealers are being offered a display stand free with orders for an assortment of forty items, intended to provide a basic stock of the new line.

Mrs. Robert Owen, wife of a prominent carpet sweeper manufacturer, heads the new company, whose factory is at 159 E. Chicago Ave., Chicago. Sales offices with sales manager Jack Eyerly in charge, are in Room 1423 The Merchandise Mart. Harry Blake, is in charge of production.

### Introduce New Bowl Cleaner

Armstrong Laboratories Chicago, have announced a new bowl cleaner, described as a highly concentrated solution having powerful non-fuming acid action for removal of rust, scale growth and unsightly discolorations on sanitary fixtures. Dealers are offered twelve bowl mops free with each case of twelve bottles.

### To Distribute Cleaning Fluids

Clinton Carpet Co., Chicago, is conducting a promotional campaign among hotels, restaurants, clubs and institutions on behalf of three new cleaning fluids for which they are distributors. One, known as "Des-Tex," is described as a fabric shampoo which also acts as a fungicide and moth-proofing agent for rugs, carpets and upholstery fabrics. The second is a dry cleaner and spot remover for mohair draperies and upholstery, said also to kill moth larvae, fleas, roaches,

etc., while the third is a many-purpose concentrated soapless cleaner for use on glass, tile, porcelain, metal and painted surfaces. Water softening and antiseptic properties are also claimed for this product.

### Martin Heads Oils Club

Chas. Martin of Sterne & Son Co., Chicago, has been elected to the presidency of the Midwest Fats and Oils Club in that city. Other officers are as follows; vice president, L. J. Phillips, Armour & Co.; secretary, Geo. K. Dahlin, Roesling, Monroe & Co.; treasurer, Sam Henry, Lever Bros. Co.

### New Hand Cleaner "Den-tex"

Dennis Chemical Co., 2701 Papin St., St. Louis, has announced a new compound, "Den-tex" for use in removing paints, laquers, varnish, resin solutions or synthetic adhesives from the hands.

### Call Soap Rationing Unlikely

Soap rationing is still decidedly unlikely, despite recent raw material shortages, says *Advertising Age*, in an analysis of the current status of the soap market in its issue of July 12. The fat and oil situation has changed sharply over recent weeks, the article points out, with the government making available to soap makers tremendous added stocks of soap making raw materials. The greatest present danger, one soap maker is quoted as saying, lies in the fact that the press and radio have been building up a belief that rationing may be imminent, thus encouraging the public to buy far beyond normal needs. The article further reviews the advertising themes of a number of leading soap makers, noting that some have turned to "conservation" copy, or are featuring claims for "long-lasting" or "thrifty" products.

### Controllers Elect Siddall

Kelly Y. Siddall, controller of the Procter & Gamble Company, has been elected president of the Cincinnati Control of the Controllers Institute of America. Frank R. Dinwiddie, president and treasurer of the Hewitt Soap Co., Dayton, Ohio has been reelected a director of the Dayton Control of the Controllers Institute.

### O'Keefe P & S Sales Mgr.

George O'Keefe has recently been appointed sales manager of the Dryer Division of Proctor & Schwartz, Inc., manufacturers of industrial drying machinery. Mr. O'Keefe will handle all matters pertaining to sales which were formerly the concern of the late Frederick Kershaw, Proctor & Schwartz president. Mr. O'Keefe, who is a graduate of the Stevens Institute of Technology, was formerly a member of the Proctor & Schwartz sales department.

### Lauffer, Former Kirk Rep., Dies

Joseph Lauffer, 88 former representative and sales manager for Kirk Flake Soap Co. of Chicago, died in Pittsburgh, June 15.

**Keep this from  
happening...**



## WITH THE NEW FORMULAS

### PQ SILICATES OF SODA YOU SHOULD KNOW:

**"N"**—Popular low alkaline solution, 41° Baumé. Approximate ratio: 1:3.22.

**"K"**—More alkaline than "N", a 47° Baumé solution. Approximate ratio: 1:2.90.

**"C"**—Alkaline solution, 59.3° Baumé. Approximate ratio: 1:2.00.

**SS-C-Pwd.**—Anhydrous powdered sodium silicate. Ratio: 1:2.00. Slowly soluble.

Ask for Bulletin 17-1 which describes 30 PQ Silicates

● Old timers call it a "coffin", but regardless of terminology, the separation of solids and liquid in the soap frame spells wasted effort. Re-handling and re-working are costly these days.

To avoid "coffins", a number of controls are important; for instance, temperature at which the soap is emptied into frames, quality of the silicate used. PQ Silicates for more

than three-fourths of a century have maintained a high quality standard on which soap makers could depend.

Be sure that every frame is solid soap through and through. The widest selection of silicates of soda available plus soap making knowledge based on our experience is offered to help you now or later.



# PHILADELPHIA QUARTZ CO.

SILICATES OF SODA

125 S. THIRD STREET, PHILA., PA.

## See Expanded Post-War Market for Glycerine in Food Field

LOOKING forward to a tremendous post-war expansion of glycerine use in the food field, the Glycerine Research Committee of the Association of American Soap & Glycerine Producers is continuing its research activities in that field. One recent result of this work has been the development of an economical quick freezing process using a 50 per cent glycerine solution. It was found that, following immersion in the glycerine solution, food products could be frozen better and more quickly, and at higher temperatures than those required for air freezing. Other recent research developments related to the value of glycerine in making chocolate bars resist hot weather, and in preserving peanut butter.

In the tremendous war-time expansion in use of glycerine, a recent AASGP bulletin reports that the greatest volume of the country's unprecedented glycerine output is going into alkyd resin paints. After fulfilling lend-lease requirements, some 42 per cent of the balance of 1943 production is going into these surface coatings. Use of glycerine in resins, incidentally, was one of the first subjects investigated when the association began its research program seventeen years ago. Explosives have declined relatively as a glycerine end use, and take only approximately 23 per cent of domestic production on the basis of present estimates. Glycerine production for the United States is currently estimated at 150,000,000 pounds.

The Glycerine Research Committee of the American Association of Soap and Glycerine Producers is made up of chemists representing the principal producing companies of the United States, under the chairmanship of N. N. Dalton of Kansas City, the Association's Technical Consultant. The members are: J. W. Bodman of Lever Bros. Co., H. S. Coith of Procter

& Gamble Co., H. S. Mitchell of Swift & Co., J. W. Reese of Colgate-Palmolive-Peet Co., and M. L. Sheely of Armour & Co. The research program is carried on mainly through the Miner Laboratories in Chicago.

### Chemical Salesmen Golf

Winners in the second golf tournament of the season of the Salesmen's Association of the American Chemical Industry, held at Bonnie Briar Country Club, Larchmont, N. Y., July 15, included:

Members Low Gross—Class A; Charles F. Alexander, of L. Sonneborn & Sons, Inc. Class B; R. M. Stevenson, of Givaudan-Delawanna, Inc. Class C; P. W. Hiller, of Innis, Speiden & Co.

Members Low Net—Class A; Russ Boland, of Topics Publishing Co. Class B; J. R. Eldridge, of the Virginia Smelting Co. Class C; George F. Smith. Guests Low Gross—C. W. Benedict. Members Kickers—C. W. Frost, of Prior Chemical Corp. and H. Cottrell, Innis, Speiden & Co.

Guests Low Net—H. M. Schulman, of National Washine Sands. Members Kickers—F. Bergren, of Oldbury Electric-Chemical Co.

Guests Kickers—C. L. Weirich, of C. B. Dolge Co., Westport, Conn. High Gross and dinner door prize—G. V. Mutchler, of McKesson & Robbins, Inc.

The first 13 prizes were \$5 worth of War Savings Stamps and the dinner door prize consisted of \$25 War Bond.

### New Synthetic Detergent

The availability of a new synthetic detergent raw material has just been announced by Phillips Sales Co., Montclair, N. J. It is marketed under the trade name "Philcosol" and is offered as a dry powder in various strengths. It is said to have been found effective in a broad range of products including cleaners, bubble

baths, textile specialties, hard water soaps, etc. Phillips Sales Co. operates in the textile and industrial field as dealers in soaps, chemicals and specialties.

### Allow Scrap for Pot Cleaners

Pot scourers may now be manufactured once again, it was announced July 20 by the WPB in amending Order L-30-d (kitchen, household and other miscellaneous articles). Wire scrap; odds and ends of knitted wire left over from the manufacture of oil filters for jeeps, trucks, planes and other automotive equipment can be rolled up and tied together to make a serviceable pot scourer, the WPB said. No other use has been found for this scrap wire, thus it is being freed for the purpose outlined.

### Packaging Convention Nov. 4-5

Packaging Institute, Inc., will hold its annual conference Nov. 4-5, 1943, at the Hotel New Yorker, New York, it was announced recently by Joel Y. Lund, president of the Institute and vice-president, Lambert Pharmacal Co., St. Louis, Mo. Technical wartime packing problems, with particular reference to new technical developments in packaging emerging from changes in the war economy will be the principal topics for discussion.

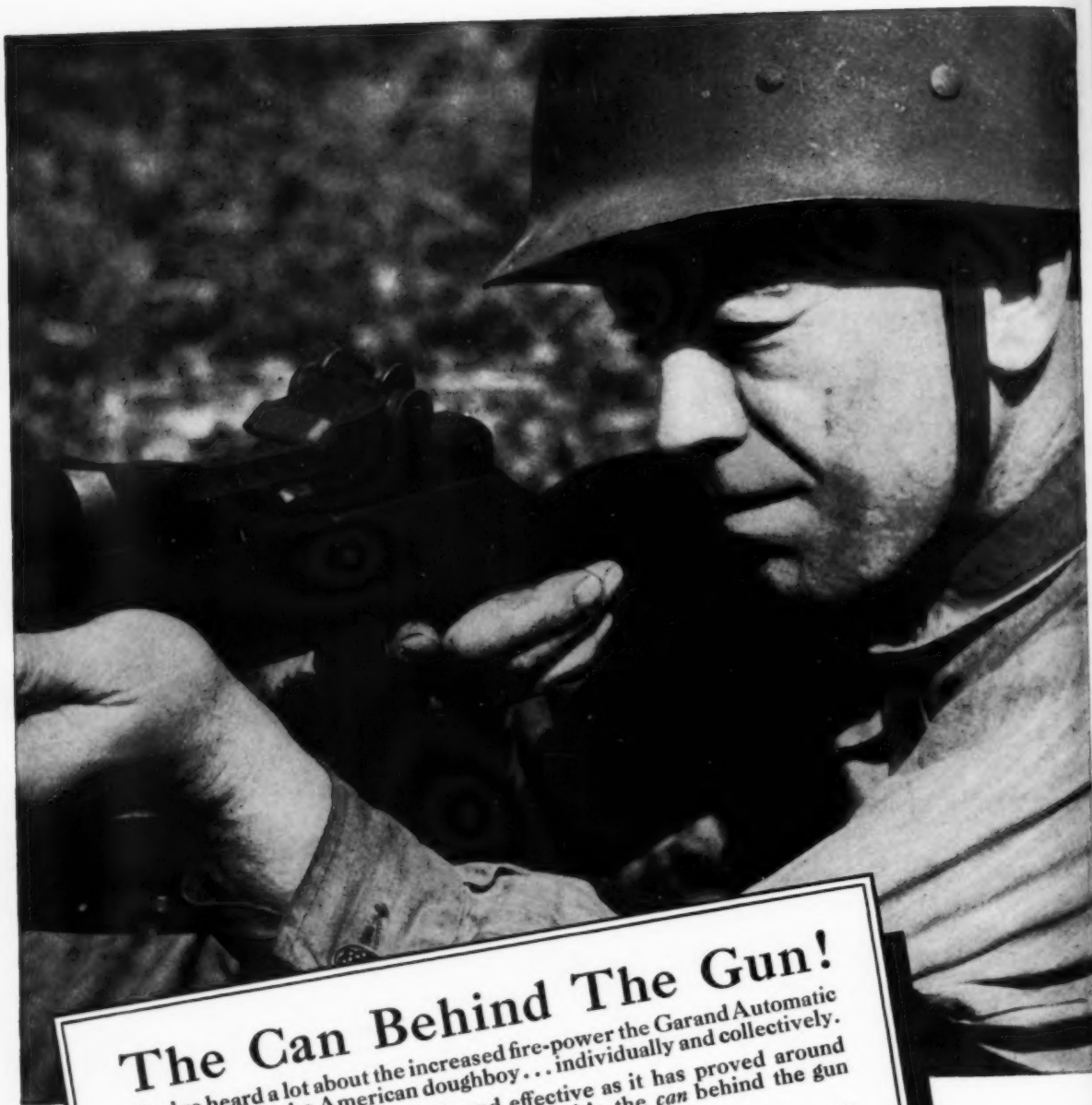
### New Laundry Bleach

A new laundry product called "K-122" has been brought out by The Laundry Chemicals Co. of Cleveland. It is the result of a development in the chemistry of paper making which was adapted to laundry use by the addition of a special soap, combined with alkalis, solvent and wetting agent. The product is said to prolong bleaching efficiency and to remove soil and stains quickly.

### Offer New Soap Extender

Burkart-Schier Chemical Co., Chattanooga, Tenn., report development of a new product—"Burk-Schier PWT"—which is offered for use as a soap extender. It is claimed that it may be substituted pound for pound in the textile plant for a considerable percentage of the soap formerly used.





## The Can Behind The Gun!

You've heard a lot about the increased fire-power the Garand Automatic Rifle has given the American doughboy... individually and collectively. But excellent as the Garand is and effective as it has proved around the world for the man behind the gun... it's the *can* behind the gun that keeps it in fighting trim.

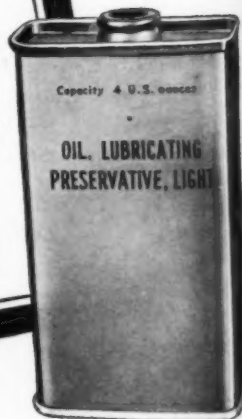
And that's the compact can of Light, Lubricating, Preservative Oil issued by the Army to prevent rusting of the action when the rifle is not in action.

At Crown we are more than a little proud that much of this lubricating oil is packed in Crown Cans... and that the can behind the gun so frequently comes from our production lines.

**CROWN CAN COMPANY, PHILADELPHIA • NEW YORK**  
*Division of Crown Cork and Seal Company • Baltimore, Maryland*



# CROWN CAN





# BIDS AWARDS

## Treasury Bids & Awards

In recent openings by the Treasury Procurement Department, Washington, D. C., for miscellaneous supplies, the following bids and awards have been announced: On 24,000 pounds of caustic soda Dow Chemical Co., Midland, Mich., submitted a low bid of \$2.98 per hundred pounds which was accepted; 6,600 quart containers of furniture polish went to Solarine Products Co., at 16c; on 22,500 pounds of toilet soap, Stahl Brothers Corp., Glendale, N. Y. bid 11.26c per pound, which was the only bid and was accepted; 4,950 gallons of disinfectant went to James Huggins & Son, Malden, Mass., with a low bid of 49c per gallon, which was accepted.

## FDA Soap Awards

The following bids for blue streaked laundry soap have been accepted by the Food Distribution Administration of the Department of Agriculture, Washington, D. C. in a recent opening for miscellaneous supplies: John T. Stanley Co., New York, 300,000 pounds at 6.35c; Newell Guttradt Co., San Francisco, 550,000 pounds at 6c; Swift & Co., Chicago, 1,000,000 pounds at 6.35c; Procter & Gamble Distributing Co., Cincinnati, 450,000 pounds at 6.54c.

## Low Printing Office Bid

In a recent opening for miscellaneous supplies by the Government Printing Office, Washington, D. C., Durite Chemical Co., Brentwood, Maryland, submitted a low bid of 33.9c on 2,200 gals. of liquid soap.

## Navy Soap Dispenser Bids

In a recent opening for miscellaneous supplies by the New York Navy Purchasing Office, New York, the following bids were submitted on

100 soap dispensers: Smolka Co., New York, \$1.87, \$1.54 (alternative); Unity Sanitary Supply Co., New York, \$4.

## Low Boiler Compound Bid

Asbestos Products Co., New York, submitted a low bid of 5.6c on 284,400 pounds of boiler compound in a recent opening for miscellaneous supplies by the Navy Bureau of Supplies, Philadelphia.

## Fuld Bros. Low on Wax

Fuld Brothers, Baltimore, submitted the low bid of 79c on 1,500 gallons of floor wax in a recent opening by the New York Navy Purchasing Office, New York. In the same opening for 5,000 pounds of type A roach powder exteminator the following bids were received: Soicicide Labs., Montclair, N. J., 27c; Completex Sales Co., New York, 29c; A. G. Mattison, Portsmouth, N. H., 29c; Deco Products Co., New York, 29.5c; P. F. Harris, Baltimore, 44c; Unity Sanitary Supply Co., New York, 46c; and Active Exterminating Co., New York, \$1.25.

## O-Cedar Low on Floor Wax

O-Cedar Corp., Chicago, submitted a low bid of \$287.10 on an unspecified quantity of floor wax in a recent opening for miscellaneous supplies by the Buildings Manager Supply section of the Federal Works Agency, Washington, D. C.

## Degreasing Compound Bids

Among the bidders in a recent opening for miscellaneous supplies by the New York Navy Purchasing Office, New York, on six 55gallon drums of noninflammable and nontoxic degreasing compound were: J. A. Tumbler Labs, Baltimore, \$28.50 a drum, including six drums at \$1.60 each; West Disinfecting Co.,

Long Island City, New York, \$1.09 a gallon, including six drums at \$7 each; R. M. Hollingshead Corp., Camden, N. J., \$1.09 a gallon, including six drums at \$1.25 each; Penetone Corp., Tenafly, N. J., \$1.469 a gallon including six drums at \$6 each.

## N. Y. Navy Bids

The following bids were received in a recent opening by the New York Navy Purchasing Office, New York, for 4,800 pounds soap base, nontoxic neutral paste: John T. Stanley Co., New York, 9.75c, including 11 drums at \$1.50 each; Cole Laboratories, Long Island City, N. Y., 11.25c; Clifton Chemical Co., New York, 11.5c; Harley Soap Co., Philadelphia, 12c, including 10 drums at \$1.75; Crystal Soap & Chemical Co., Philadelphia, 12c; R. M. Hollingshead Corp., Camden, N. J., 14c; Du Bois Soap Co., Cincinnati, 16.5c; Unity Sanitary Supply Co., New York, 20c, including 12 drums at \$3.

## FDA Soap Bid to Wrisley

A bid of 14.86c per pound on 60,000 pounds of toilet soap by Allen B. Wrisley Distributing Co., Chicago, was accepted by the Food Distribution Administration, Washington, D. C. in a recent opening for miscellaneous supplies.

## Soaps for PX Still Ex-quota

The FDA has just clarified the status of oils and fats used by soap makers in making soap for delivery to Post Exchanges or Ships Service Stores. They are ex-quota, whether the soaps are to be delivered to exchanges or service stores either within or without Continental United States. This is the first time that sales to such agencies *within* Continental United States have been so exempted.

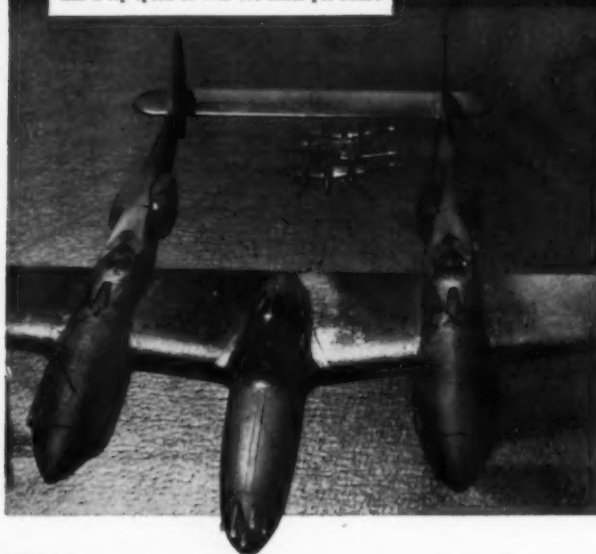
## F. W. Fraley New Diamond V.P.

Fred W. Fraley, graduate chemical engineer who has been associated with the company for the past fifteen years, was appointed vice-president and director of sales for Diamond Alkali Co., Pittsburgh, last month. He will be in complete charge of all sales operations.

# THE SOLVAY PROCESS\*

*...KEYED TO TODAY AND TOMORROW!*

**LIGHTNING!** This Lockheed P-38 is packed with power, mounts four machine guns and one cannon. The only twin-engine, single-seat fighter in U.S. service, the amazing P-38 has a top speed of over 400 miles per hour!



**YOUR NEW CAR—1942 MODEL!** Super-streamlined, comfortable as your own living room, the car of tomorrow will offer exciting new improvements in driving ease and operation.



*Today* . . . Solvay Alkalies are making important contributions in the building of fighter planes, bombers and transports. Three great strategically located Solvay plants are now supplying Soda Ash, Caustic Soda and many other important related products. Solvay, established in 1881, is the largest source of alkalies in America!

*Tomorrow* . . . Solvay will continue to combine long experience and immense resources for producing alkalies of the highest quality, and will continue to help industry with its knowledge and technical service. . . . Solvay Products will be used towards building a better way of life for the peoples of the world!

## SOLVAY

TRADE MARK REG. U. S. PAT. OFF.

\* The Solvay Process employs salt, limestone and ammonia to make Soda Ash, from which basic material Caustic Soda and other necessary alkalies are derived.



**SODA ASH • CAUSTIC SODA**  
**AMMONIUM CHLORIDE • CAUSTIC POTASH**  
**MODIFIED SODAS • AMMONIUM BICARBONATE**  
**SODIUM NITRITE • PARA-DICHLOROBENZENE**  
**CALCIUM CHLORIDE • CHLORINE • SALT**  
**POTASSIUM CARBONATE**

**SOLVAY SALES CORPORATION**

*Alkalies and Chemical Products Manufactured by  
 The Solvay Process Company*

**40 RECTOR STREET NEW YORK 6, N. Y.**

**BRANCH SALES OFFICES:**

Boston • Charlotte • Chicago • Cincinnati • Cleveland • Detroit  
 New Orleans • New York • Philadelphia • Pittsburgh • St. Louis • Syracuse

# TRADE MARKS

The following trade - marks were published in the July issues of the *Official Gazette* of the United States Patent Office in compliance with Section 6 of the Act of September 20, 1905, as amended March 2, 1907. Notice of opposition must be filed within thirty days of publication. As provided by Section 14, fee of ten dollars must accompany each notice of opposition.

## Trade Marks

**RUB-R-ITE**—This in bold upper case letters for liquid preparation for cleaning typewriter rollers and typewriter type. Filed Oct. 15, 1942 by Mohawk Chemical Products, Inc., Philadelphia. Claims use since Aug. 25, 1942.

**LIMEGON**—This in bold upper case letters for washing powder. Filed May 3, 1943 by Pittsburgh Chemical Laboratory, Pittsburgh, Pa. Claims use since June, 1941.

**RED ROSE**—This in upper case reverse letters across the drawing of a rose for bottled sodium hypochlorite solution used as a deodorant and disinfectant. Filed April 3, 1943 by Red Rose Chemical Co., Newark, N. J. Claims use since Mar. 22, 1943.

**FUNGI-SAN**—This in upper and lower case italic letters for chemical preparation for fumigating tobacco. Filed Apr. 12, 1943 by Tobacco States Chemical Co., Cave City, Kentucky. Claims use since Sept., 1941.

**GARDANTHROL**—This in bold upper case letters for aromatic chemical for use in soaps, cosmetics, etc. Filed Apr. 16, 1943 by The Dow Chemical Co., Midland, Michigan. Claims use since Mar. 2, 1942.

**MOTHAL**—This in upper case bold stencil letters for insecticide. Filed Apr. 30, 1943 by The Selig Co., Atlanta, Georgia. Claims use since Apr. 17, 1943.

**ARGO SHEEN**—This in extra bold upper case letters for cleaner of

woodwork, furniture, upholstery, rugs, venetian blinds, windows, mirrors and automobiles. Filed Mar. 9, 1943 by Argo & Co., Memphis, Tenn. Claims use since Jan. 25, 1943.

**DUX**—This in upper case in-line letters for a preparation for the treatment of athlete's foot. Filed July 14, 1941 by Simons and Heiden, Chicago. Claims use since July 3, 1941.

**FOREST BREATH**—This in upper case bold letters on the lower half of a disc bearing a mountain scene for a disinfecting and deodorizing spray. Filed Apr. 28, 1943 by Magitex Co., Saco, Maine. Claims use since Oct. 30, 1939.

**HYDROFECT**—This in upper case bold letters for disinfectant and fungicide. Filed Apr. 30, 1943 by West Disinfecting Co., Long Island City, N. Y. Claims use since Nov. 11, 1942.

**STAN-DEX**—This in upper and lower case old English letters for hand protective paste. Filed May 12, 1943 by Stanley Laboratories, Chicago. Claims use since May 5, 1943.

**RINGGO**—This in upper and lower case italic letters for cleansing and bleaching liquid to be used on marble, porcelain, tile, enamel ware, etc. Filed July 29, 1942 by United Chemical Co., Kansas City, Mo. Claims use since 1931.

**BORZIN**—This in bold upper and lower case letters for industrial metal cleaning compound. Filed Mar. 24, 1943 by Turco Products, Inc., Los Angeles. Claims use since August, 1939.

**UNICHEM**—This in extra bold upper case stencil letters for fur cleaning compounds. Filed Apr. 5, 1943 by United Chemical Works, Chicago. Claims use since July 30, 1942.

**FURACIN**—This in bold upper case letters for antiseptics and germicides. Filed April 21, 1943 by The Norwich Pharmacal Co., Norwich, N. Y. Claims use since Dec. 3, 1942.

**BRAZILIA**—This in bold upper case letters for toilet soap. Filed May 6, 1943 by Pinaud, Inc., New York. Claims use since Apr. 23, 1943.

**FARM HOUSE**—This in bold upper case letters for soap chips and scouring soap. Filed May 10, 1943 by Reid, Murdoch & Co., Chicago. Claims use since August, 1900.

**FULDICIDE**—This in bold upper case letters for disinfectants, germicides, and fungicides. Filed May 10, 1943 by Fuld Brothers, Baltimore. Claims use since Apr. 14, 1943.

**MOTHER EARTH**—This in bold upper case letters for polish and cleaner for automobiles and painted, varnished or lacquered surfaces. Filed Apr. 27, 1943 by Clayton H. Trotti, Greenwood, S. C. Claims use since Mar. 16, 1943.

**ASCO**—This in reverse letters on a diamond background for leather soaps and saddle soaps. Filed Sept. 29, 1942 by Asco Chemical Co., Brooklyn. Claims use since April, 1933.

**ROYAL ESQUIRE**—This in upper and lower case, bold Old English letters for soap and shoe shining outfits. Filed Apr. 9, 1943 by Royal Esquire Distributors, Newark, N. J. Claims use since Apr. 23, 1937.

**SULFAFILM**—This in bold upper case letters for germicidal compositions. Filed Aug. 7, 1942 by Wallace & Tiernan Products, Inc., Belleville, N. J. Claims use since July 19, 1942.

**DIAMOND**—This in upper case open letters on a lined diamond design for a chemical compound for bleaching hats. Filed Dec. 17, 1942 by Diamond Products Manufacturing Co., New York. Claims use since Mar. 1, 1910.

**RAT MASTER**—This in bold upper case letters for rodent and roach poison in paste form. Filed Feb. 25, 1943 by Schutte Laboratories, Beaver Falls, Pa. Claims use since Dec. 22, 1941.

**ALL BEAT WK**—This in upper case bold and stippled open letters on which a man's face is superimposed for hand and skin lotions. Filed Apr. 19, 1943 by Wendel Kirsch, New York. Claims use since Aug., 1942.

**DIXIE**—This in upper case letters on the wheel house of a steam boat



# AROMATIC

## SYNTHETIC

Products of a Continuous Research Program Spanning 50 Years



CHEMICALS INDISPENSABLE  
TO INDUSTRY AND VICTORY

THE DOW CHEMICAL COMPANY MIDLAND MICHIGAN

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design for lye. Filed Apr. 24, 1943 by The Pennsylvania Salt Manufacturing Co., Philadelphia. Claims use since July, 1934.

#### Trade Marks Granted

401,970. Cleaning and washing compounds. Filed by Diamond Alkali Co., Pittsburgh, Sept. 16, 1942. Serial No. 455,562. Published Apr. 13, 1943. Class 4.

402,001. Wax polish for various floor coverings. Filed by Turco Products, Inc., Los Angeles, Jan. 18, 1943. Serial No. 458,002. Published Apr. 13, 1943. Class 16.

402,007. Liquid cleaning composition for surgical instruments. Filed by Meinecke & Co., New York, Jan. 21, 1943. Serial No. 458,078. Published Apr. 13, 1943. Class 4.

402,012. Dry cleaning detergent. Filed by R. R. Street & Co., Chicago, Jan. 25, 1943. Serial No. 458,162. Published Apr. 13, 1943. Class 4.

402,025. Detergents used in the processing of textiles. Filed by Arkansas Co., Newark, N. J., Feb. 22, 1943. Serial No. 458,674. Published Apr. 13, 1943. Class 4.

402,057. Chemical preparation for cleaning glass, silver and gold. Filed by Stanley Home Products, Inc., Westfield, Mass., June 4, 1942. Serial No. 453,475. Published Apr. 20, 1943. Class 4.

402,058. Cleaner, polish and wax. Filed by Ken-Nite Co., Detroit, June 8, 1942. Serial No. 453,551. Published Apr. 20, 1943. Class 4.

402,070. Preparation for the treatment of athlete's foot and other skin fungi. Filed by Cuprinol, Inc., Boston, Dec. 29, 1942. Serial No. 457,637. Published Apr. 13, 1943. Class 6.

402,071. Soapless lathering material for cleaning glass, etc. Filed by Socony-Vacuum Co., New York, Dec. 29, 1942. Serial No. 457,645. Published Apr. 20, 1943. Class 4.

402,086. Household cleaning and polishing paste. Filed by Harriet A. Minor, New Orleans, Jan. 25, 1943.

Serial No. 458,157. Published Apr. 13, 1943. Class 4.

402,236. Insecticide material. Filed by Ansbacher Siegle Corp., New York, Aug. 22, 1939. Serial No. 422,849. Published Nov. 21, 1939. Class 6.

402,272. Dispensers for water softening and cleansing compounds. Filed by Antispetol Co., Chicago, Oct. 26, 1942. Serial No. 456,411. Published May 4, 1943. Class 13.

402,275. Liquid preparation for the treatment of athlete's foot. Filed by Ralph Padalino, Elizabeth, N. J., Nov. 14, 1942. Serial No. 456,829. Published Apr. 27, 1943. Class 6.

402,282. Fungicide chemicals. Filed by United States Rubber Co., New York, Dec. 4, 1942. Serial No. 457,215. Published May 4, 1943. Class 6.

402,295. Deodorizer and moisture absorbent. Filed by Puritan Chemical Corp., Atlanta, Jan. 6, 1943. Serial No. 457,777. Published Apr. 27, 1943. Class 6.

402,344. Creamed or semi-liquid tooth paste. Filed by Lambert Pharmacal Co., Wilmington, Del., Mar. 1, 1943. Serial No. 458,842. Published May 4, 1943. Class 6.

402,350. Laundry sodas, cleaners, sours, etc. Filed by Diamond Alkali Co., Pittsburgh, Mar. 6, 1943. Serial No. 458,935. Published Apr. 27, 1943. Class 6.

402,355. Rodent exterminator. Filed by W. G. Reardon Laboratories, Inc., Port Chester, New York, Mar. 11, 1943. Serial No. 459,029. Published Apr. 27, 1943. Class 6.

402,362. Disinfectant. Filed by Dr. Hess & Clark, Inc., Ashland, O., Mar. 16, 1943. Serial No. 459,150. Published May 4, 1943. Class 6.

402,409. Liquid leather cleaner, polishes and dye. Filed by The Nu-Di Products Co., Cleveland, O., Dec. 26, 1942. Serial No. 457,611. Published May 4, 1943. Class 4.

402,414. Antiseptic cleaning powder and water softener. Filed by Wilmer Products, Carnegie, Pa., Jan. 26, 1943. Serial No. 458,175. Published Apr. 27, 1943. Class 4.

402,426. Product for washing fruits and vegetables. Filed by Vega Rinse Co., Chicago, Feb. 22, 1943. Serial No. 458,696. Published May 4, 1943. Class 4.

402,446. Moth proofing materials for paint, etc. Filed by The Moth-tone Co., Needham, Mass., Mar. 19, 1943. Serial No. 459,226. Published May 11, 1943. Class 6.

#### Army-Navy "E" to Niagara

Niagara Alkali Co. received the Army-Navy joint "E" pennant at the company plant, Niagara Falls, N. Y., recently, for its part in producing war materials. J. Clarke Cassidy, president of Niagara, presided at the ceremonies; S. Willard Jacobs, vice-president, accepted the "E" pennant on behalf of the management.

#### Name Shulton Dallas Man

Paul C. Stoneman, a former representative of Amity Leather Co., McKesson & Robbins and for fourteen years with Davis Bros. Wholesale Drug Co., Denver, has joined the sales staff of the Dallas office of Shulton, Inc., soap and toiletries manufacturers.

#### THE COMMERCIAL LAUNDRY

(From Page 33)

We, in the U.S.A., are, as a whole, acutely conscious of the indissoluble link between cleanliness and health. Our high standards of living, more than being mere expressions of luxury, are the very foundations of a wholesome, healthy outlook. They are the source of our long record of public sanitation, better housing and low mortality rate which offer a model for other nations. The American people have demanded—and gotten—organizations for the protection and furtherance of good health. They must now see to it that one of these organizations—the laundry industry—is not curtailed in its essential work in preventing disease.★★

<sup>1</sup>"New Method Developed to Launder TNT," C. B. Myers, Jr., "Laundry Age," May, 1943.

<sup>2</sup>C. H. Bayley; Canadian Research Institution of Launderers & Cleaners.

<sup>3</sup>Ellen H. Richards, Institute & Dept. of Bacteriology, Penna. State College Chemistry Leaflet, 717, 97.



**N**ATURALLY, Malmstrom's Nimco Brand Lanolin . . . America's No. 1 Lanolin, offers the user of Lanolin the advantage of positive uniformity.

It's an extra something that's the result of Malmstrom research to improve the quality and value of Nimco Brand Lanolin and allied products.

To check results on a commercial basis order a quantity today, or send for free testing sample.



**America's No. 1 Choice Because It's 5 WAYS BETTER**

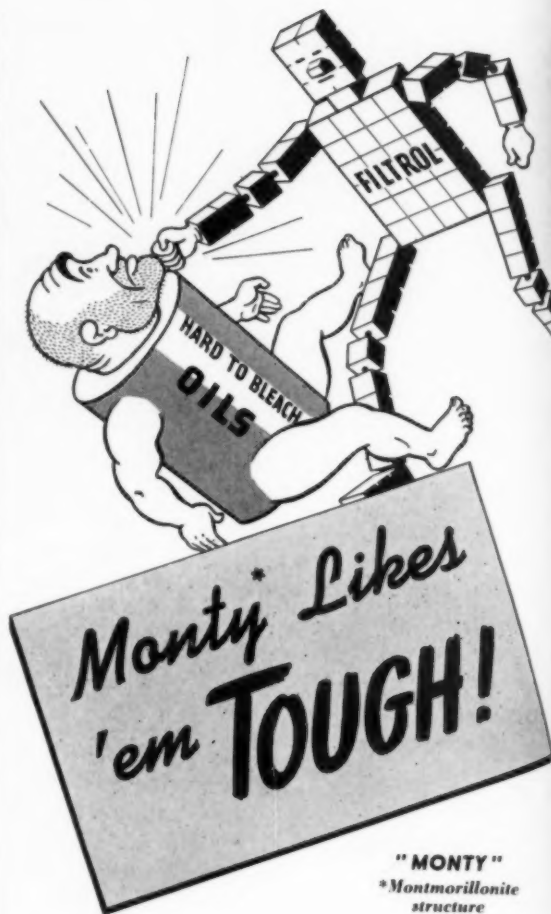
1. LOWEST **ODOR** VOLUME
2. GREATER **UNIFORMITY**
3. BETTER **COLOR** QUALITY
4. SMOOTHER **TEXTURE**
5. FINER **BODY** CONSISTENCY

**N. I. MALMSTROM & CO.**

America's Largest Suppliers of **LANOLIN** • Anhydrous U.S.P. • Hydrous U.S.P. • Absorption Base • Technical **DEGRAS** • Neutral and Common • **WOOL GREASES**

147 LOMBARDY STREET • BROOKLYN, NEW YORK

STOCKS CARRIED IN CLEVELAND • CHICAGO • KANSAS CITY • MINNEAPOLIS



**"MONTY"**  
\* Montmorillonite structure

"Monty" is a mighty welcome visitor in processing plants these days, because he is the activated agent that can best cope with the hard-to-bleach oils.

"Monty" . . . Special Filtrrol . . . processes these dark-colored oils successfully, brings them up to the most exacting specifications and produces maximum recovery. "Monty" is Scotch, too . . . extremely economical . . . you use less Special Filtrrol, and there is less press cake loss, so you get more oil and better oil when "Monty" is on the job. Filtrrol Corporation, 634 S. Spring St., Los Angeles, Calif. Plants: Vernon, Calif., and Jackson, Miss. (F4)

*Special*  
**FILTROL**

THE ACTIVATED AGENT SPEEDS PRODUCTION — CONSERVES MATERIALS

# MARKETS

As of July 28, 1943.

**F**URTHER relief for the soap maker on fat and oil supplies has been forthcoming in the past two months, with future prospects considerably brighter than they have been for some time past. Government permission to use some of the oil stocks which had been frozen in his hands; permission to purchase oils from government stock piles; and permission to use some edible oils and fats have bettered a situation that was rapidly becoming desperate. With word that more coconut, palm and soybean are being released, it is evident that these important soap raw materials are coming into the country in increased quantities. The continuing improvement in the shipping situation is encouraging and probably is reflected in the improvement of the coconut picture.

## Tallow Situation Easing

The tallow situation, which has been growing tighter in the past few months, will, no doubt, ease considerably within the next three to four weeks with an ever-growing influx of cattle to the slaughter houses. Brightening tallow prospects and increased availability of coconut and other high lauric acid oils, redound to the mutual advantage of both. Use of imported tallow and palm oil should benefit soapers caught in the fat and oil squeeze.

There is a third aspect to this whole situation that will have a profound effect on it. Once again there is talk of the government issuing a mandatory regulation requiring all soapers to use extenders such as rosin, tallol and various salts in a ratio of, perhaps, ten per cent of all oils and fats used. This step would be

another in the direction of still further lifting the unprecedented burden on the oil and fat supply.

## Spring Pig Crop Up 22%

Good news also comes from another quarter. The Department of Agriculture announced recently that a spring pig crop of about 74 million head is on hand. This figure represents an increase of about 22% above

the 1942 crop. The fall crop is also expected to be larger than that of a year ago. By some 21%, says the Department of Agriculture in its June Pig Crop Report. Increases in the number of sows farrowed this year are also up, as are the number of hogs over six months old on farms as of June 1.

## Perfuming Materials

Summarizing the world market situation on perfuming materials, Geranium Bourbon is available in large quantities and at low prices in the Reunion and Madagascar islands, but apparently shipping facilities are lacking; French flower oils are unavailable in sizeable quantities, with Jasmine very short and North Africa not supplying us yet; oil of lavender remains unobtainable, while lavandin is available at steady though not unreasonable prices; Spanish spike lavender is too high to evoke much interest, to say nothing of the difficulties in trading with Spain; Italian bergamot, available from Brazil, exists in good quantity and at not unreasonable prices in the U. S.; Bulgarian rose, available in Portugal, is in good supply in the U. S.; Citronella Java is unavailable, excepting in occasional small expensive lots; Citronella Ceylon is stronger and selling ten or fifteen per cent above the price quoted a month ago; Oil of lemongrass affected by the Florida market dropped about 25% in price early in June and is now steadier; Brazilian menthol, thought to be the answer to the supply situation of that material, turned out weakly with the total supply of only a couple hundred pounds.

The tight supply situation of insecticide materials continues with prices static at ceilings.

**FDO Order 67, covering the allocation of tallow and grease, has just been issued by the War Food Administration. Effective August 1, 1943, tallow and grease producers must set aside 30 per cent of their production for essential war industry users, who will be given a preference over other users in obtaining their requirements of these materials. It will be remembered that several months ago the OPA attempted to get needed tallow and grease to industrial users by raising the ceiling price this group of smaller users might pay. However, since soap makers were required to pay less than the essential industrial users, soapers were unable to obtain sufficient quantities of tallow, and the order had to be revised. Under the new allocation order soap manufacturers are not permitted to apply for authorization to buy tallow. Their requirements will be filled only after needs of essential war users are taken care of.**

**Current soap production will be maintained, officials said, by the use of crude soybean, palm and coconut oils, recently released in large quantities for the use of soap makers, and other domestic materials to augment the short supply of tallow and grease. The order also limits inventories of tallow and grease users to a 45 day supply, and inventories of producers and dealers to a 15 day supply.**



# When the War is over

## FATTY ACIDS *will still be*

Less expensive on a unit cost production basis—for soap. Easier to control than corresponding whole oils—for soap. More uniform in chemical characteristics—for soap. Absolutely reliable in quality.

THE LEADING PRODUCER WILL STILL BE

# WOBURN

DEGREASING CO. OF N. J.

Harrison, N. J.

## RAW MATERIALS FOR THE SOAP INDUSTRY

### SUBSTITUTES FOR COCONUT OIL

Mixtures of Vegetable oil fatty acids to replace coconut and other high-glycerine content oils now unavailable to many soap makers. It will pay you to investigate these replacement materials. Write for samples and prices.

Caster Oil	Olive Oil Foots	Soya Bean Oil
Corn Oil	Peanut Oil	Fatty Acids
Cottonseed Oil	Rapeseed Oil	Lard Oils
Olive Oil	Sesame Oil	Neatsfoot Oil
		Petrolatum
		Silicate Soda
		Metasilicate
		Tri Sodium Phosphate
Boric Acid		
Modified Soda		
White Mineral Oil		

LAMEPON K—A soapless and limestable detergent for Textiles, Soaps, Insecticides, Sanitary Cleaners, Laundry Products.

### DRY ALKALIES

A recent innovation in Welch, Holme & Clark service is the mixing of dry alkalies for private formula products. Let us handle this operation for you.

Grease	Borax
Lanolin	Caustic Potash
Caustic Soda	Carbonate Potash
Soda Ash	Salt Soda

Di Sodium Phosphate  
Chlorophyll  
Superfating Agent

LAMEPON 4C—A foaming and wetting agent of slightly acid reaction for cosmetics.

For samples and information write to

# WELCH, HOLME & CLARK CO., Inc.

563 GREENWICH STREET

ESTABLISHED 1838

NEW YORK CITY



# PRICES

(As of July 26, 1943)

Minimum Prices are for car lots and large quantities. Price range represents variation in quotations from different suppliers and for varying quantities.

## Chemicals

Acetone, C. P., drums	lb.	\$ .08½	\$ .09
Acid, Boric, bbls., 99½%	ton	109.00	126.00
Cresylic, drums	gal.	.81	.83
Low boiling grade	gal.	.81	.83
Muriatic, C. P., carboys	lb.	.06½	—
Oxalic, bbls.	lb.	.11¼	.12½
Alcohol, Ethyl, drums	gal.	11.94½	11.98
Complete Denat., SDI, dms., ex.	gal.	.62	.67
Alum. Potash lump, bbls.	lb.	.04½	—
Ammonia Water, 26°, drums	lb.	.02¼	.02½
Ammonium Carbonate, tech., drums	lb.	.08½	.09¼
Bentonite	ton	11.00	16.00
Bleaching Powder, drums	100 lb.	2.50	3.60
Borax, pd., bbls., bags	ton	41.50	71.00
Carbon Tetrachloride, car lots	gal.	.60	1.17
L. C. L.	gal.	.80	1.27
Cresol, U.S.P., drums	lb.	10%	.11¼
Cresote Oil	gal.	.141	—
Feldspar, works	ton	14.00	20.50
Formaldehyde, bbls.	lb.	.05½	.06¼
Fullers Earth	ton	8.50	15.00
Glycerine, C.P., drums	lb.	.18%	.19¼
Dynamite, drums	lb.	.18%	.18%
Saponification, drums	lb.	.12%	.14
Soap lye, drums	lb.	.11½	—
Lanolin, U.S.P., hydrous, drums	lb.	.32	—
Anhydrous, drums	lb.	.33	—
Lime, live, bbls.	ton	6.25	14.50
Mercury Bichloride, drums	lb.	2.34	2.39
Naphthalene, ref. flakes, bbls.	lb.	.08	.08½
Orthodichlorobenzene	lb.	.07	.08
Paradichlorobenzene, drums	lb.	.11	.15
Petrolatum, bbls. (as to color)	lb.	.028	.07%
Phenol (Carbolic Acid) drums	lb.	.10½	.11¼
Pine Oil, drums	gal.	.55	—
Potash, Caustic, solid	lb.	.06¼	.06%
Flake, 88-92%	lb.	.07	.07½
Liquid, 45% basis	lb.	.03¼	.03½
Potassium Carbonate, solid	lb.	.06½	.06%
Liquid	lb.	.03	.03¼
Pumice Stone, coarse	lb.	.03%	.04¼
Rosins (net wt., ex dock, New York)—			
Grade D to H	100 lb.	3.81	4.47
Grade I to N	100 lb.	4.47	4.61
Grade WG to X	100 lb.	4.67	5.20
Rotten Stone, dom., bags	lb.	.0128	.019
Silica	ton	17.00	38.00
Soaps—			
Tallow Chip, 88%	lb.	.11	.11%
Powder, 92%	lb.	.11%	.12
Powdered, White Neutral	lb.	.25½	.42
Olive Oil Paste	lb.	.40	—
Shampoo Base	lb.	.18	.20
Liquid Concentrate, 30-32%	gal.	.75	.79
Soda Ash, cont., wks., bags, bbls.	100 lb.	1.15	3.25
Car lots, in bulk	100 lb.	.90	—
Soda Caustic, cont., wks. solid	100 lb.	2.30	3.55
Flake	100 lb.	2.70	5.70
Liquid, tanks, 47-49%	100 lb.	1.92½	1.95

Soda Sal., bbls.	100 lb.	1.20	1.40
Sodium Chloride (Salt)	ton	14.20	18.00
Sodium Fluoride, bbls.	lb.	.07	.08
Sodium Bisulfate	100 lb.	2.20	2.40
Sodium Metasilicate, anhyd.	100 lb.	4.00	5.30
Granulated	100 lb.	2.50	3.55
Sodium Pyrophosphate	100 lb.	5.28	6.60
Sodium Silicate, 40 deg., drum	100 lb.	.80	1.20
Drums, 52 deg. wks.	100 lb.	1.40	1.80
Tar Acid Oils, 15-25%	gal.	.27½	.33½
Triethanolamine	lb.	.19	.20
Trisodium Phosphate, bags, bbls.	100 lb.	2.70	4.15

## Oils — Fats — Greases

Babassu, tanks, futures	lb.	.1110	Nom.
Castor, No. 1, bbls.	lb.	.1300	.1455
No. 3, bbls.	lb.	.1275	—
Coconut (without excise tax)			
Manila, tanks, N. Y.	lb.	.0835	—
Tanks, Pacific Coast, futures	lb.	No Prices	—
Copra, bulk, coast	lb.	No Prices	—
Corn, tanks, West	lb.	.12%	—
Cottonseed, crude, tanks, mill	lb.	.12%	—
PSY, futures	lb.	.13%	.14½
Fatty Acids—			
Corn Oil, tanks, Chicago	lb.	.14	.14½
Coconut Oil, tanks, Twitchell, Chi.	lb.	.18	.18½
Cotton Oil, tanks, Chicago	lb.	.14	.14½
Settled soap stock, Chicago	lb.	.03%	.04
Boiled soap stock, 65%, Chi.	lb.	.04%	.05
Foots, 50%, Chicago	lb.	.03%	.03%
Castor Oil, split, tanks, N. Y.	lb.	.20%	.21¼
Linseed Oil, split, tanks, N. Y.	lb.	.1530	—
Distilled	lb.	.21	.21½
Myristic acid, distilled, tanks, N.Y.	lb.	.19	.19½
Palm Oil, white tanks, N. Y.	lb.	No Prices	—
Single distilled	lb.	No Prices	—
Soybean Oil, split, tanks, N. Y.	lb.	.1175	—
Distilled	lb.	.1390	.1400
Red Oils, bbls., dist. or sapon	lb.	.1250	—
Tanks	lb.	.12½	—
Stearic Acid, saponif.			
Double pressed	lb.	.16%	—
Triple pressed	lb.	.18%	—
Greases, choice white, tanks	lb.	.08¼	—
Yellow	lb.	.07%	—
Lard, city, tubs	lb.	.1400	—
Linseed, raw, bbl.	lb.	.1530	—
Tanks, raw	lb.	.1490	—
Olive, denatured, bbls., N. Y.	gal.	4.10	4.20
Foots, bbls., N. Y.	lb.	.19	Nom.
Palm, Sumatra, cif. New York, tanks lb.		No Prices	—
African, tanks, ex. ship	lb.	.08¼	Nom.
Palm, kernel	lb.	No Prices	—
Peanut, crude, tanks, mill	lb.	.13	Nom.
Soya Bean, domestic, tanks, crude	lb.	.11%	Nom.
Stearin, oleo, bbls.	lb.	.1054	—
Tallow, special, f.o.b. N. Y.	lb.	.08½	—
City, ex. loose, f.o.b. N. Y.	lb.	.08%	—
Teased Oil, crude	lb.	.29	Nom.

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	American Pulverized Per Cent	Italian Select Per Cent
Silica .....	72.90	73.24
Alumina .....	11.28	10.61
Iron Oxide .....	.86	1.57
Titanium Oxide .....	.06	.10
Calcium Oxide .....	.80	1.10
Magnesium Oxide .....	.36	.40
Soda .....	3.64	3.03
Potash .....	4.38	5.58
Sulphuric Anhydride .....	.03	.05
Loss on ignition .....	5.20	4.04

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Almond, Bitter, Artificial	lb.	\$ 3.50	\$ 3.75
Bitter, F.F.P.A.	lb.	5.25	5.50
Sweet, cans	lb.	1.85	1.95
Anise, cans, U.S.P.	lb.	3.60	3.70
Bay, 55-60% phenols, cans	lb.	1.60	2.10
Bergamot, coppers	lb.	32.00	Nom.
Artificial	lb.	2.25	6.50
Birch Tar, rect., cans	lb.	—	—
Crude, cans	lb.	—	—
Bois de Rose, Brazilian	lb.	4.75	5.00
Cayenne	lb.	—	—
Cade (juniper tar), drums	lb.	1.50	Nom.
Cajeput, tech., drums	lb.	—	2.10
Calamus, cans	lb.	—	—
Camphor, Sassy, drums	lb.	—	—
White, drums	lb.	—	—
Cananga, native, cans	lb.	17.00	17.50
Rectified, cans	lb.	18.25	20.00
Cassia, Redistilled, U.S.P.	lb.	10.50	12.00
Cedar Leaf, cans	lb.	1.05	1.35
Cedar Wood, light, drums	lb.	.75	1.00
Citronella, Java, drums	lb.	—	—
Citronella, Ceylon, drums	lb.	1.10	1.25
Clove, U.S.P., cans	lb.	1.80	2.00
Eucalyptus, Austl., U.S.P., cans	lb.	1.30	1.50
Fennel, sweet, cans	lb.	3.60	—
Geranium, African, cans	lb.	30.00	Nom.
Bourbon, cans	lb.	24.00	—
Turkish (Palmarosa)	lb.	5.25	5.50
Hemlock, cans	lb.	1.20	1.25
Lavender, 30-32% ester, cans	lb.	9.00	9.25
Spike, Spanish, cans	lb.	4.25	4.35
Lemon, Ital., U.S.P.	lb.	—	Nom.
Cal.	lb.	3.00	—
Lemongrass, native, cans	lb.	1.55	1.75
Linaloe, Mex., cases	lb.	3.85	—
Nutmeg, U.S.P., cans	lb.	5.25	5.50
Orange, Sweet, W. Ind., cans	lb.	6.00	6.25
Italian cop	lb.	8.00	Nom.
Distilled	lb.	1.00	—
California, expressed	lb.	1.45	—
Origanum, cans, tech.	lb.	2.80	3.25
Patchouli	lb.	8.00	8.50
Pennyroyal, dom.	lb.	—	—
Imported	lb.	3.15	3.25
Peppermint, nat., cans	lb.	5.50	5.75
Redis, U.S.P., cans	lb.	6.00	6.25
Petitgrain, S. A., cans	lb.	1.80	1.90
Pine Needle, Siberian	lb.	3.00	3.25
Rosemary, Spanish, cans	lb.	2.25	2.30
drums	lb.	2.10	2.15
Sandalwood, dom., dist., U.S.P.	lb.	5.85	6.25
Sassafras, U.S.P.	lb.	1.85	2.00
Artificial, drums	lb.	1.75	1.85
Spearmint, U.S.P.	lb.	—	3.40
Thyme, red, N. F.	lb.	3.25	3.50
White, N. F.	lb.	3.50	3.75
Vetiver, Java	lb.	42.00	50.00
Ylang Ylang, Bourbon	lb.	—	—

## Aromatic Chemicals

Acetophenone, C. P.	lb.	\$ 1.55	\$ 1.60
Amyl Cinnamic Aldehyde	lb.	—	—
Anethol	lb.	2.25	2.40
Benzaldehyde, tech.	lb.	.45	.55
N. F. VI	lb.	.85	2.75
Benzyl, Acetate	lb.	.59	Nom.
Alcohol	lb.	.63	.75
Citral	lb.	4.75	5.00
Citronellal	lb.	2.75	3.25
Citronellol	lb.	7.00	7.25
Citronellyl Acetate	lb.	—	—
Coumarin	lb.	2.75	3.25
Diphenyl oxide	lb.	.43	.50
Eucalyptol, U.S.P.	lb.	3.25	3.40
Eugenol, U.S.P.	lb.	2.75	2.80
Geraniol, Soap	lb.	2.50	3.00
Other grades	lb.	3.50	4.00
Geranyl Acetate	lb.	—	—
Heliotropin	lb.	5.25	Nom.
Hydroxycitronellal	lb.	7.25	8.75
Indol, C. P.	lb.	28.00	30.00
Ionone	lb.	2.75	3.95
Isoborneol	lb.	.81	.90
Iso-boryl acetate	lb.	.80	.95
Iso-Eugenol	lb.	—	—
Linolool	lb.	6.75	7.00
Linalyl Acetate	lb.	5.50	7.25
Menthol, natural	lb.	—	—
Synthetic, U.S.P.	lb.	13.00	19.00
Methyl Acetophenone	lb.	—	—
Anthranilate	lb.	2.20	2.35
Paracresol	lb.	—	—
Salicylate, U.S.P.	lb.	.35	.40
Musk Ambrette	lb.	4.00	4.45
Ketone	lb.	4.15	4.60
Xylol	lb.	1.40	1.80
Phenylacetaldehyde	lb.	5.00	6.00
Phenylacetic Acid	lb.	1.85	1.90
Phenylethyl Alcohol	lb.	2.10	2.50
Rhodinol	lb.	—	—
Safrol	lb.	1.70	1.85
Terpineol, C.P., dra.	lb.	.40	—
Cans	lb.	.43	—
Terpinyl Acetate, 25 lb. cans	lb.	.87	—
Thymol, U.S.P.	lb.	3.00	Nom.
Vanilin, U.S.P.	lb.	2.35	2.75
Yara Yara	lb.	1.80	1.85

## Insecticide Materials

Insect Powder, bbls.	lb.	.29	.30
Pyrethrum Extract			
20 to 1	gal.	5.90	6.00
30 to 1	gal.	8.85	9.00
Derris, powder—4%	lb.	.31	—
Derris, powder—5%	lb.	.35	—
Cube, powder—4%	lb.	.31	—
Cube, powder—5%	lb.	.35	—
Squill, red, dried	lb.	.85	.88

## Waxes

Bees, white	lb.	.57	.63
African, bgs.	lb.	.3750	—
Refined, yel.	lb.	.5250	.6050
Candelilla, bgs. (crude)	lb.	.38	—
Carnauba No. 1, yellow	lb.	.8325	.8925
No. 2, N. C.	lb.	.7575	.8175
No. 3, Chalky	lb.	.7125	.7725
Ceresin, yellow	lb.	.13½	.18
Montan Wax, bags	lb.	.45	.46
Paraffin, ref., 125-130	lb.	.0520	.0560





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Nuchar Active Carbon has been called upon to perform many extra duties in America's stepped-up war production.

Almost daily, new purification problems arise within the Oil and Soap Industry, particularly in the manufacture and processing of newly developed replacement materials—problems that require the knowledge of specialists in purification by adsorption.

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# PRODUCTION

A section of SOAP devoted to the technology of oils, fats, and soaps published prior to Jan. 1, 1932, as a separate magazine under the title, Oil & Fat Industries.

## Evaluation of Rosins in Soaps

**R**OSIN is composed of about 85 per cent of resin acids, 10 per cent of resenes or unsaponifiable matter, and 5 per cent of esters. The unsaponifiable matter consists of hydrocarbons and high molecular-weight secondary alcohols of the sterol type. The resin-acid portion consists of abietic, *l*-pimaric *d*-pimaric and other acids of uncertain structure. Contrary to general belief, abietic acid represents only a portion of the acids and may be lacking, or present up to about 40 per cent.

The resin acids are unsaturated and contain two double bonds, one of which is more reactive than the other. This unsaturation causes rosin to absorb oxygen. Wood rosin is somewhat more resistant to oxidation than gum rosin. Hydrogenated rosin, is extremely resistant to oxidation, as is soap made from it.

Work with gum rosin in soap has been reported previously, but not much with wood rosin or with the two rosins together for comparison. Both have been used here so that all the commercial rosins available would be represented.

### Sudsing Action

In moderately soft water—50 p.p.m. or 2.9 grains per gallon—the rosins in full-boiled white or brown tallow-coconut oil-base soaps are quite effective in maintaining or improving sudsing action. Refined wood rosin

was generally superior to gum rosin or hydrogenated rosin in this respect. This was true not only regarding the volume of suds developed but also in the stability of the suds. In moderately hard water—300 p.p.m. or 17.5 grains per gallon—all of the rosins were about equivalent. While they did not enhance the suds volume or its stability, neither did they detract from it.

### Detergent Action

In determining detergent efficiency, washing tests were used with standard samples of soiled cotton cloth washed in a Launderometer. When present in a white tallow-coconut oil-base soap containing no builder,—refined wood rosin, regular gum rosin, and hydrogenated rosin were about equivalent. Over the range of rosin concentrations normally used, these rosins not only maintained high detergent action but actually enhanced this property of the base soap in water of moderately low hardness as designated above. When the harder water was used, refined rosin and regular gum rosin were substantially equivalent in maintaining the detergent action of the base soap, but hydrogenated rosin and specially refined gum rosin were somewhat inferior and about equivalent to each other.

When the rosins were used in brown tallow-coconut oil-base soap, they were somewhat less effective in

detergency. Refined rosin and hydrogenated rosin were similar and superior to regular or specially refined gum rosin, both in moderately soft and moderately hard water.

White tallow-base soaps of high titre which contained 15 and 25 per cent of K wood rosin possessed approximately the same detergent value in soft and hard water as the tallow soap base. Hydrogenated rosin in the same soap base enhanced the detergent action in both soft and hard water.

Rosin when substituted for part of the brown tallow of moderately high titre did not detract from the detergent efficiency of the base soap, when the rosin concentration was within the range of that normally used in soap manufacture. The detergent efficiency was somewhat better in hard water than in soft water.

It appears that the titre value of the tallow used determines to some extent the detergent action of the rosin-containing tallow soaps. Tallow of moderately high titre when used with rosin soaps is apparently superior with respect to sudsing properties.

### Built Soaps

Built soaps were prepared using brown tallow (90 per cent)—grease (10 per cent) stock as the base, and sodium silicate plus soda ash as builders. The detergent efficiency of the soaps was high, as shown in the table:

Soap Composition	Dry basis	pH of solution	Detergent Efficiency	
			0.3% in soft water	0.55% in hard water
1. K wood rosin soap . . . . .	30	9.4	84	73
Sodium silicate . . . . .	12			
Soda ash . . . . .	4			
Base soap . . . . .	54			
2. K wood rosin soap . . . . .	27	9.95	84	79
Sodium silicate . . . . .	6			
Soda ash . . . . .	3.6			
Base soap . . . . .	63.4			
3. K wood rosin soap . . . . .	18	10	103	83
Sodium silicate . . . . .	6			
Soda ash . . . . .	3.7			
Base soap . . . . .	72.3			

### Spray-dried Soaps

Spray-dried soaps (white tallow 75 per cent—coconut oil 25 per cent) were prepared containing various percentages of rosin. The results show that powdered soaps containing 15 per cent or less of the various rosins on a dry basis, were not only light in color, being substantially snow white, but had no apparent tendency to revert or coalesce when exposed to a temperature of 80°F. in air saturated with moisture, for over 300 hours. The aged soaps showed no tendency to discolor. Built soaps containing 15 per cent of rosin, 12 per cent of sodium silicate, and 4 per cent of soda ash

were about equivalent in color and resistance to reversion as the unbuilt soaps. All were effective detergents.

### Solubility

The results indicate that hydrogenated rosin is more efficient than K wood rosin in increasing the solubility of soaps of certain soap bases. K wood rosin did not increase the solubility of 100 per cent white tallow soap, but hydrogenated rosin did. Both K wood rosin and hydrogenated rosin increased the solubility of moderately high-titre brown tallow and tallow-coconut oil base soaps. J. N. Borglin, P. R. Mosher, Barbara Noble and T. Punshon. *Oil & Soap* 20, 77-84 (1943).

### Vegetable Fat Antioxidants

The kinetics of the oxidation of tocopherol during the induction period of animal and vegetable fats were studied by photometric methods. Tocoquinones are the immediate oxidation products of tocopherols in fats. Chroman-5,6-quinones also appeared during the course of the induction period of vegetable fats but never during the autoxidation of animal fats, even when tocopherol had been added to them. These antioxygenic *ortho*-quinones retarded the accumulation of fat peroxides in vegetable fats after the complete disappearance of the tocopherols. The successive action of these two antioxidants explains the absence of sharp induction periods in vegetable fats.

When employed at higher levels, tocopherols are decreasingly effective as antioxidants. This accounts for the previously recognized ineffectiveness of tocopherols and inhibitor

concentrates when added to vegetable fats. C. Golumbic. *Oil & Soap* 20, 105-7 (1943).

### Menhaden Oil Composition

The precipitate obtained from winterizing crude menhaden oil was crystallized several times from acetone to give a crystalline solid. Methanolysis and fractional distillation indicated 19.6 per cent of methyl myristate, 62 per cent of methyl palmitate, 17.6 of methyl stearate and 0.8 per cent of an ester of higher molecular weight.

The unsaturated acids with 18 carbon atoms obtained from the oil gave dihydroxystearic acids. The 18-carbon fraction contained chiefly 9,10-octadecenoic acid, with some 11,12-octadecenoic and octadecatetrenoic acid. The 20-carbon unsaturated acids are mainly 11,12-eicosenoic and eicosa-pentenoic acids. W. H. Baldwin and L. E. Parks. *Oil & Soap* 20, 101-4 (1943).

### Mildew Preventatives

Mildews are a well known series of molds or fungi which cause stains in various textile fabrics. In spite of considerable progress in the chemical control of this micro flora, they remain very difficult troubles to eliminate. The characteristic musty smell of the material is usually the first sign of mildew infection. This is followed by the appearance of colored spots, because the thread-like hyphae grown from the germinating spore form a faint yellowish brown pigment. The characteristic color of the species of mildew appears with the spore-bearing or fruiting heads. Some typical examples are greenish stains from *Penicillium chrysogenum*, brownish from *Aspergillus niger*, reddish from *A. versicolor*, yellowish from *A. Wentii*, purple from *Fusarium spp.* and black from *Mucor spp.*

Some of the more effective treatments for mildew-proofing cotton are the use of acetone, formalin and soda ash, catechu copper sulfate and ammonium hydroxide, copper propionyl acetate, cadmium chloride followed by borax. Sodium pentachlorophenate is an effective low-cost preventive. Sodium silicofluoride in the proportion of 1 part in 400 is suitable in certain cases. Eric Hardy. *Textile Colorist* 65, 256, 262, 280 (1943).

### Glyceride Oil Refining

Glyceride oils are refined by mixing a refining agent with the oil to react with free fatty acids present to form soap stock. An agent to promote separation of soap stock and oil is mixed in, and the resulting mixture centrifuged to separate soap stock from the oil. Benjamin Clayton and Benjamin H. Thurman. Canadian Patent No. 413,271.

### Suppressing Hydrolysis

Liquids, unsaturated fatty acids are converted to chloro or chlorohydroxy derivatives with an iodine number of 5 or less, to give soap with suppressed hydrolysis. The product is then saponified until total or partial splitting of the chlorine occurs. Carl Stiepel. German Patent No. 708,437; through *Chem. Abs.*

# Detergents from Petroleum

A BRIEF history of the development of synthetic detergents, and a comparison of their properties and uses with those of soaps, is included in an article by Lawrence Flett, National Aniline Division, Allied Chemical & Dye Corp., in the July 10th issue of *Chemical and Engineering News*. The author deals specifically with products of the "Nacconol" type, and emphasizes the increasing importance of these petroleum-derived detergents, particularly in the face of the current unavailability of coconut oil for soap use in quantities approaching pre-war requirements.

Economical use of any of the new detergents, says Mr. Flett, requires a careful consideration of the correct amount of salt to be used. Sulfonates in very dilute solutions, he points out, are improved surprisingly in their washing action by the addition of salts. Another important consideration is the amount of detergent to be used. In tests conducted on "Nacconol NR" washing was found to be at its optimum level at a concentration of 2 parts of detergent per 1,000 of washing medium. At the higher concentration of 8 parts per 1,000, washing was no better than that obtained at 1 part per 1,000, although eight times as much detergent was consumed.

Results of a series of tests comparing "Nacconol" with soap showed that the actual organic material required for a white washing of wool was only 25 to 30 per cent as much in the case of "Nacconol" as required when using soap. Washing time was also reported as being speeded up,—two to five minutes for the synthetic as compared with twenty minutes for soap. Hard water was found not to impede the washing action with "Nacconol" substantially, while it affected seriously the ability of soaps to wash test samples of wool.

Tests were also conducted to illustrate the moth repellent and moth proofing characteristics of the "Nac-

conols." Wool washed with an 0.3 to 0.4 per cent concentration of "Nacconol" was found to be immune to attack by moth larvae, and to sustain a limited amount of rinsing without loss of its mothproofing action. Use of "Nacconol" in leather tanning, mildew prevention, dish washing, preparation of products for use by people allergic to soap, as a dairy detergent, etc. are also discussed.

## Soybean Oil Determination

The effect of moisture was studied on the quantitative determination of lipids in soybean samples which were pretreated (1) by conditioning to a range of moisture content, (2) by heating in the presence of a 60:40 per cent mixture of benzene and methanol, and (3) by heating and denaturing the protein in the sample in the presence of water vapor. The wide variation in the results for lipid content indicates that the lipids removed cannot be considered as either triglycerides alone, or total lipids, but as giving an empirical value by a rigidly controlled procedure. It is apparent that methods are needed to determine the triglycerides and the total lipid content of soybeans and soybean meal. W. C. Bull. *Oil & Soap* 20, 94-6 (1943).

## Molecular Distillation

Molecular distillation of a crude expeller soybean oil yielded 31 fractions plus residue. Data for the iodine numbers of the oil fractions indicated that a small but definite fractionation of triglycerides took place. The iodine number spread was 12.5 units. Unsaturated fatty acids tended to concentrate in the later fractions, while the opposite was the case for the saturated acids.

Of the total unsaponifiable matter present in the original charge of oil, 46 per cent appeared in fractions 1 and 2, and another 18 per cent in fractions 3, 4 and 5. Corresponding

figures for free fatty acids are 39 and 11 per cent, respectively. Most of the phosphorus present was concentrated in the residue.

Numerous analyses and physical measurements of the several distillates indicated the extent of fractionation of the various components present, including triglycerides, free fatty acids, unsaponifiable matter, phosphatides, pigments and antioxidants. The stability of various fractions was also measured. The results demonstrate that the molecular still is useful in studying crude oil as well as refined grades. S. B. Detwiler Jr., W. C. Bull, and D. H. Wheeler. *Oil & Soap* 20, 108-21 (1943).

## Useful Life of Phosphates

Removal of water from within an orthophosphate molecule gives unique properties to the resulting meta- and pyro-phosphates. These properties are naturally lost when hydration to the orthophosphate occurs. Hence a quantitative determination of the useful life of these materials is of value. "Useful life" is defined as that time when 50 per cent by weight of the original  $P_2O_5$  content of the molecularly dehydrated material has reverted to the orthophosphate form.

The rate of hydration of meta- and pyro-phosphates in 1 normal acid and of metaphosphate in 1 normal alkaline solution is too rapid to permit their commercial use in such solutions unless an almost instantaneous reaction occurs. The pyrophosphate hydrates very slowly in 1 normal alkaline solution.

The "useful life" of all materials tried is at least 24 hours at 85°C. in waters whose pH is between 7.0 and 9.0. Daily dosage therefore will maintain the desired conditions without loss of effectiveness under similar operating conditions. At 56°C. the useful life of all materials tried is much greater. Commercial fused tetraphosphate does not hydrate in solution in the same manner as a comparable physical mixture of meta- and pyro-phosphates. Ralph A. Morgen and Robert L. Swoope. *Ind. Eng. Chem.* 35, 821-4 (1943).

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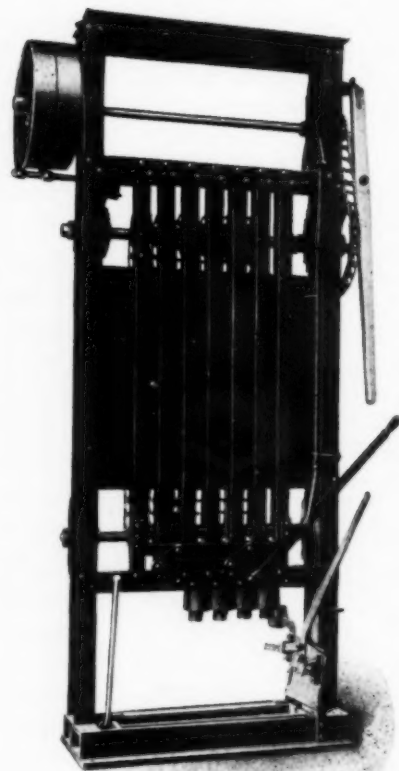
## **SLEDGE A DRUM OF CAUSTIC or ROSIN IN 1 to 3 MINUTES**

By the use of this sledging machine, caustic or rosin is prepared for the grinding mill efficiently and quickly.

The ordinary hand method of doing this preparatory operation is laborious and slow. This sledging machine does it thoroughly in from 1 to 3 minutes, without any physical exertion, other than to roll the drum onto the machine and then rotate it on the rollers.

2 H.P. is sufficient to operate this machine.

*Particulars will be sent on request.*



## **HOUCHIN SOAP MACHINES**

*include:*

CHIPPERS    AMALGAMATORS    MILLS    PLODDERS  
SLABBERS    CUTTING TABLES    CRUTCHERS  
CAN-TOP SEALERS, ETC.

**HOUCHIN**  
**MACHINERY COMPANY, Inc.**

FIFTH AND VAN WINKLE AVENUES

HAWTHORNE, NEW JERSEY



## Water Sorption by Soap

Anhydrous soap, pure or commercial, takes up 1 or 2 per cent of water according to a sorption mechanism of physical type. Except for sodium oleate, the curd or supercurd then suddenly forms a hemihydrate, which again takes up water more rapidly—up to 10 or 12 per cent—according to a sorption law until another phase forms. At low temperatures these new phases are higher hydrates; they are masses of crystalline fibers containing much larger amounts of water. The higher hydrates readily revert to hemihydrate when the relative humidity falls by 15 per cent or less. The sorption curves unmistakably show the presence of capillary liquid in pores and interstices of the fibrous mass.

The data agree with previous indications in the literature. For example, a milled soap—85 per cent soap—shows 87 per cent relative humidity, whereas a household soap—70 per cent soap—exhibits 96.5 per cent relative humidity and a 63 per cent soap shows 97.5 per cent relative humidity. At ordinary temperatures only a nearly saturated atmosphere affects commercial soap appreciably, allowing it to become moist or to sweat. Even in hot climate, sweating of soap does not begin below 85 per cent relative humidity. James W. McBain and Will Win Lee. *Ind. Eng. Chem.* 35, 784-7 (1943).

## Refining Soybean Oil

Soybean oil was refined with alkali solutions of 3, 5, 6, 8, 10, 14 and 20° Be. The acid number of refined oil is directly proportional to the excess of alkali, but the color is little affected. The losses caused by the saponification of neutral oil increase with increase in the concentration and with the excess of alkali, reaching 0.3-15 per cent with 14-20° Be. alkali.

In refining soybean oil with sulfuric acid, the best product is obtained by using 1 per cent of acid and stirring at 60 r.p.m. for 2 hours. Losses of oil are 0.3-1.3 per cent. On washing the oil with water after the acid treatment, losses reach 20-

30 per cent. The other disadvantages of the sulfuric-acid refining are overcome to a considerable degree by a supplementary alkali treatment. After the sulfuric-acid treatment the oil is freed from the bottoms by decantation without washing with water, and treated with 50 per cent excess of 20° Be. alkali. V. A. Rush et al. *Khim. Referat. Zhur.* 4, No. 2, 104, 105; through *Chem. Abs.*

## Lathering Ability

Soap, fatty alcohol sulfate and a proprietary product were compared as to lathering ability. It was concluded that the amount of lather in itself is not a criterion for washing powder. However, with correctly compounded washing agents it is an indicator for proper washing technique. Edmund Walter. *Fette und Seifen* 48, 622-4; through *Chem. Abs.*

## FDO-42 Amended

(From Page 30)

the month in which the fats and oils were so used, he shall mail to the Director a report of such use on Form FDA-478, or such other forms as the Director may prescribe.

(iv) The use of fats and oils in the manufacture of edible finished products and soaps to be exported to the Dominion of Canada where such Dominion has granted a license for the import of such products, or to any other country pursuant to an export license issued by the Board of Economic Warfare.

(6) A manufacturer's use of fats and oils pursuant to paragraphs (b) (5) (ii), (iii), and (iv) shall not be charged against his quota under paragraph (b) (1) hereof, and any fats or oils used or consumed by a manufacturer in the base period for any use set forth in paragraphs (b) (5) (ii), (iii), and for the manufacture of edible finished products and soap for export to a foreign country shall be excluded in determining his quota under paragraph (b) (1) hereof.

(7) A person who acquires all the manufacturing facilities of another person in a particular class of use shall thereby become entitled to the quota of such other person in such class of use, whether or not he continues to operate such facilities in whole or in part: *Provided, however*, That he shall within 30 days following such acquisition inform the Director of the facilities acquired, their location, whether or not operation will be continued in the same or another location, and the amount of quota which he claims to have acquired in each class of use.

(8) Fats and oils owned by one person, which are processed by another

## Oil Stabilization

Glyceride oils which are subject to oxidation are stabilized by heating to temperatures above 120°C. in the presence of small quantities of carbohydryte and phosphorus-containing compounds. Sidney Musher, to Musher Foundation, Inc. Canadian Patent No. 413,378.

## Oil Refining

Oils and fats containing free fatty acids and color impurities are refined by neutralization with an aqueous solution of soda ash, added in separate amounts in a total quantity of not less than 3 times that theoretically required for neutralizing the free fatty acids. The resultant foots are separated by centrifuging while the soda ash solution is present in a quantity sufficient to render separation of soap stock possible. Benjamin Clayton, to Refining, Inc. Canadian Patent No. 413,570.

person, shall be charged against the quota of the owner and not the processor: *Provided, however*, That the title to the product resulting from the processing shall remain in the owner of the fats and oils and such owner shall market the product and shall invoice and collect for such product through his own organization, and the processor shall not buy directly or indirectly any product so produced. Otherwise, such fats and oils shall be chargeable against the quota of the processor.

(9) Each manufacturer of soap may, in any calendar quarter, substitute, in whole or in part, for the fats and oils (other than foots made from domestic vegetable oils or the fatty acids made from such foots) which he would be entitled to use under Schedule A in such manufacture, foots made from domestic vegetable oils or the fatty acids made from such foots. The quantity of such foots or their fatty acids which may be used or consumed shall be 80 per cent of the base period use of fats and oils.

## (c) Restrictions on processing and inventories.

(1) No person shall accept delivery of fats and oils for his raw material inventory if the fats and oils in his raw material inventory are, or would through such acceptance become, in excess of a practicable working minimum inventory. This paragraph (c) (1) does not, however, restrict the inventories of any fat or oil in the form in which it is first produced by the crusher or renderer, or of any vegetable oil foots or their fatty acids.

(2) No manufacturer shall hereafter change the condition of any fat or oil in his raw materials inventory, or add any additional materials thereto, except to the extent necessary to store any such fat or oil in his raw materials

inventory in a form necessary to prevent deterioration thereof, or except to put such fats or oils into process for the manufacture of his products subject to the limitations of paragraph (c) (3).

(3) No manufacturer shall hereafter increase the rate at which fats and oils are put into process by him, except to the extent necessary to meet the required deliveries of his finished products within the limitations established by this order and to maintain only a practicable minimum working inventory of such finished products. The term "practicable minimum working inventory," as used in paragraph (c) (1) and (3), shall be strictly construed. The mere fact that the turnover has increased, or that materials are difficult to obtain, does not justify maintaining inventories above the minimum at which his operations can be continued.

(d) *Prohibited uses of fats and oils.*

(1) No person shall use or consume any butter or any of the following fats and oils in any class of use listed in Schedule A other than the manufacture of margarine or the manufacture of other edible finished products: Oleo oil, Edible olive oil, Peanut oil, Sunflower oil, Sesame seed oil, Raisin seed oil, Tomato seed oil, Cottonseed oil, Corn oil.

(2) Nothing in paragraph (d) (1) hereof shall restrict the use of any fat or oil in any inedible product or soap where and to the extent that:

(i) the quantity of any such fat or oil owned by such person on December 31, 1942, was less than 60,000 lbs.;

(ii) any such fat or oil is used in the manufacture, preparation, or finishing of protective coatings and coated fabrics under the provisions of paragraph (b) (5) (iii) hereof, or in the manufacture of USP XII Soap for medicinal use; or soft soap, hospital grade, according to United States Army specifications No. 4-1027A (February 5, 1941) for delivery to the United States Army;

(iii) any such fat or oil is a by-product or residue (except stearine) of the permitted processing of any fat or oil, or consists of tank bottoms of any fat or oil;

(iv) the use by any person of any such fat or oil in any class of use which has been specifically authorized by the Director, where such person establishes, to the satisfaction of the Director, by letter that such fat or oil was owned by him on December 31, 1942, and was on such date unfit for edible use.

(e) *Existing contracts.* The restrictions of this order concerning delivery, acceptance, use, processing, and consumption of fats and oils shall be observed without regard to existing contracts or any rights accrued or payments made thereunder.

(f) *Records and reports.*

(1) Each manufacturer, other than a soap converter, who, in any calendar quarter, uses or consumes

more than 6,000 lbs. of fats and oils in the aggregate, shall file with the Bureau of the Census, Washington 25, D. C., each of the following reports in the following manner:

(i) He shall file, on or before the 15th day of each month, Bureau of Census Form BM 1, or such other form or forms as may be prescribed by the Director, showing the consumption of fats and oils during the preceding month; and

(ii) He shall file, on or before the 15th day of the second month of the succeeding quarter, Bureau of Census Form BM 2, or such other form or forms as may be prescribed by the Director, showing the consumption of fats and oils during the preceding quarter.

(2) The Director shall be entitled to obtain such information from, and require such reports and the keeping of such records by, any person, as may be necessary or appropriate, in his discretion, to the enforcement or administration of the provisions of this order.

(g) *Bureau of the Budget approval.* The reporting requirements of this order have been approved by the Bureau of the Budget in accordance with the Federal Reports Act of 1942. Subsequent specific record-keeping or reporting requirements by the Director will be subject to the approval of the Bureau of the Budget pursuant to the Federal Reports Act of 1942.

(h) *Audits and inspections.* The Director shall be entitled to make such audit or inspection of the books, records and other writings, premises or stocks of fats and oils of any person, and to make such investigations, as may be necessary or appropriate, in his discretion, to the enforcement or administration of the provisions of this order.

(i) *Petition for relief from hardship.* Any person affected by this order who considers that compliance herewith would work an exceptional and unreasonable hardship upon him may petition in writing for relief to the Director, setting forth all pertinent facts and the nature of relief sought. The Director may thereupon take such action as he deems appropriate and such action shall be final.

(j) *Violations.* The War Food Administrator may, by suspension order, prohibit any person who violates any provision of this order from receiving, making any deliveries of, or using fats and oils, or any other material subject to priority or allocation control by the War Food Administrator, and may recommend that any such person be prohibited from receiving, making any deliveries of, or using materials subject to the priority or allocation control of other governmental agencies. In addition, any person who wilfully violates any provision of this order is guilty of a crime and may be prosecuted under any and all applicable laws. Further, civil action may be instituted to enforce any liability or duty created by, or to enjoin any violation of, any provision of this order.

(k) *Communications.* Except as

hereinbefore provided, all reports required to be filed hereunder and all communications concerning this order shall, unless instructions to the contrary are issued by the Director, be addressed to the War Food Administrator, United States Department of Agriculture, Washington 25, D. C., Ref. FD-42.

(l) *Effect of other orders.* Insofar as any other order of the Secretary of Agriculture, the War Food Administrator, or the Director, heretofore or hereafter issued, limits or curtails to a greater extent than herein provided the use, acquisition, or disposition of any fat or oil, the limitations of such other order shall control.

(m) *Territorial extent.* This order shall apply only to the forty-eight states of the United States, the District of Columbia, and the Territory of Alaska.

(n) *Effective date.* This amendment shall become effective on the 10th day of July 1943, at 12:01 a.m. EWT. However, with respect to violations of Food Distribution Order 42, or rights accrued, or liabilities incurred hereunder, prior to said date, said Food Distribution Order 42 shall be deemed in full force and effect for the purpose of sustaining any proper suit, action, or other proceeding with respect to any such violation, right or liability. (E. O. 9280, 7 F. R. 10179; E. O. 9322, 8 F. R. 3807; E. O. 9334, 8 F. R. 5423).

Issued this 10th day of July 1943.

(S) MARVIN JONES,  
War Food Administrator.

SCHEDULE A

Class of use	Permitted percentage
Manufacture of margarine.....	167
Manufacture of other edible finished products, including shortening .....	88
Manufacture of soap, exclusive of soap made from domestic vegetable oil foots or the fatty acid from such foots.....	80
Manufacture of soap from foots made from domestic vegetable oils or the fatty acids from such foots.....	80
Manufacture of paints, varnishes lacquers, and all other protective coatings, except enamels and coatings for metal food containers, metal food closures, and food closure liners.	50
Manufacture of enamels and coatings for metal food containers, metal food closures, and food closure liners.....	100
Manufacture of linoleum, oil-cloth, and felt base floor coverings .....	50
Manufacture of oilcloth (for all purposes other than floor coverings) and all other coated fabrics .....	50
Manufacture of printing inks, including lithographing, offset silk screen, and other processing inks.....	90

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, 1943





# U.S.I. CHEMICAL NEWS

August



A Monthly Series for Chemists and Executives of the Solvents and Chemical Consuming Industries



1943

## U. S. Industrial Alcohol Co. Merged Into U. S. Industrial Chemicals, Inc.

### New Acetone Uses Developed Covering Many Varied Fields

Importance of Chemical Shown  
By Study of Recent Patents

Although generally considered a staple chemical with a fairly limited although important field of utility, acetone is finding many new uses in a wide variety of processes. As an indication of the unexplored possibilities of this highly reactive chemical, a study of recent patents reveals many such applications. A few of the more interesting are outlined in the following paragraphs as described by their inventors.

In the rubber compounding field, for example, a typical new use for acetone is in condensation with aryl amide to produce an age resistor for rubber which is particularly effective at elevated temperatures.

For inhibiting oxidation in rubber, another inventor recommends incorporating about 0.1% or more of a product of thermal reaction of a ketone such as acetone, an aliphatic "hydrocarbon alcohol" such as isopropanol, and a secondary di-aromatic amine such as diphenylamine in the presence of an acidic catalyst, with elimination of water.

One use for acetone in the metal-working field is its use in combination with boron trifluoride. An organic flux for soft soldering metals is obtained which is described as non-corrosive when left in contact with the metal being soldered and yet which mildly, but uniformly, attacks the metal surface during the soldering operation.

To produce a solvent for dewaxing mineral oils, acetone is recommended in combination with amyl mercaptan. Certain treated waxy lubricating oil stocks of 70 seconds Saybolt universal viscosity when mixed with such a

(Continued on next page)

### Composition Developed for Treating Plastic Materials

BURBANK, Calif.—A patent has been awarded to an inventor here for a composition suitable for use in the treatment of cellulose derivatives, such as photographic film, which is claimed to be effective either to prevent shrinkage and deterioration or to restore the normal characteristics of such materials after having undergone a loss of their volatile constituents.

The composition comprises an azeotropic mixture of one or more volatile organic solvents, such as dibutyl phthalate, and one or more volatile plasticizing agents such as ethanol, isopropanol, butanol, and ethyl acetate.



### New Name Signifies Increasing Interest in Growing Chemical Field

Effective at the close of business on July 16th, U. S. Industrial Alcohol Co. has been merged with, and into, U. S. Industrial Chemicals, Inc., in line with the Company's increasing interest and growing activities in the broader field of industrial chemicals—and consistent with the present trends in the research and development of U.S.I. products.

By constant research and development, U.S.I. has expanded its activities until it is not only one of the largest industrial alcohol manufacturers, but a major producer of chemicals and solvents derived from alcohol.

Originally organized in 1906 under the name of U. S. Industrial Alcohol Co. for the express purpose of manufacturing industrial alcohols, the Company has gradually increased its activities in alcohol-derived solvents, chemicals and intermediates.

#### U.S.I. Activities Increase

Interest in the development of related alcohol-chemical products has continued until today U.S.I. offers a most complete line of these products for applications and for organic syntheses in new fields of endeavor.

Among important recent additions to the U.S.I. line are a number of new acetoacetylides, developed in recognition of the growing importance of yellow pigments and dyestuffs, and ethyl benzoylacetate, an intermediate useful in the manufacture of dyes and the synthesis of many chemical compounds. U.S.I. has also recently manufactured quantities of Indalone, insect repellent outstanding for slow-evaporating and film-forming characteristics, and ethyl sodium acetone-oxalate, a highly reactive chemical.

#### New Glycerol Method

Another significant contribution made by U.S.I. during the past year was the development of a commercially practical method for producing glycerol by fermentation of molasses which is expected to alleviate the cri-

(Continued on next page)

### High Bactericidal Properties Claimed for New Compound

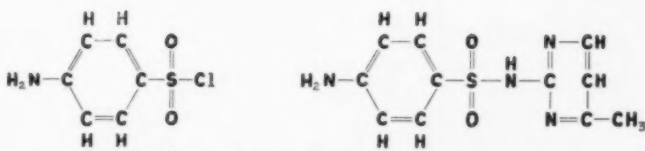
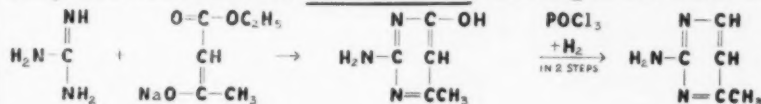
DALLAS, Tex.—A new compound, hexamethyl-para-rosaniline-chloride-copper, has been patented by two inventors here which is said to have remarkable bactericidal, protozooidal, ovacidal, and fungicidal action while remaining relatively harmless to body tissues.

As described by the inventors, the process of preparing this compound includes dissolving 1.5 grams of crystal violet dye in 10.5 cc. of ethanol and 90 cc. of water having 2 cc. of 95% U.S.P. lactic acid therein. Approximately 90 cc. of the first solution is then mixed with 8 cc. of the second solution and 2 cc. of water.

#### Improving Soya-bean Oil

A process for improving the color and extending the pre-reversion period of soya-bean oil which may be partly hydrogenated or refined has been reported. The oil is heated for several hours under reduced pressure in the presence of superheated steam if desired, at 205-260° with 0.01 to 0.5% of glycerol to remove volatile constituents.

### Ethyl Acetoacetate Used as New Sulfa Drug Intermediate



Typical of the wide range of important products made with the aid of ethyl acetoacetate is its use as an intermediate for the new sulfa drug sulfamerazine, which is reported to be more powerful than sulfadiazine and less liable to cause damage to the kidneys. Sulfamerazine can be produced in accordance with sequence shown above.

**U.S.I. Merger**

(Continued from preceding page)

tical demand for this war-important material.

**Intermediates Developed**

One of the major undertakings of U.S.I.'s laboratories at the present time is the development of new chemical intermediates for use in the manufacture of hormones, amino acids, vitamins, insecticides, and chemo-therapeutics.

To exploit further uses for the staple products and develop new ones, a Technical Sales Development Department was established by U.S.I. with headquarters in a newly constructed laboratory building.

A significant step in the widening of U.S.I.'s chemical activities was its entrance into the field of synthetic resin manufacture with a fairly complete line which includes modified and pure phenolics, alkyds, urea-formaldehydes and ester gums. A line of natural resins was added a short time later.

Two new plants have been built to increase U.S.I.'s resin manufacturing capacity. Both the manufacture and sale of these materials are now conducted by U.S.I.'s Stroock & Wittenberg Division.

Through an active research and development program, coupled with the maintenance of high standards of purity and uniformity, U.S.I. has been able to serve not only virtually every important industry, but to make a substantial contribution to America's fight for freedom as well.

**Patent Awarded for Process To Separate Fatty Acids**

A method for obtaining fatty-acid fractions relatively rich in stearic and palmitic acids from mixtures such as tallow and garbage grease is the subject of a recent patent.

The method comprises dissolving the fat in a solvent such as 90% methanol, and establishing in the solution a quantity of neutral fat amounting to about 0.5 to 3.5% of the weight of the fatty acids. The solution is then chilled to provide a fraction purer in stearic than in palmitic acid. After this fraction has been removed by filtration, the solution is again chilled to effect crystallization of an eutectic mixture of stearic and palmitic acids. This fraction is also removed by filtration and the solution again chilled to precipitate a fraction richer in palmitic acid than in stearic acid. This final fraction is also removed by filtration.

**New Acetone Uses**

(Continued from preceding page)

solvent are claimed to produce a dewaxed oil with a pour point of 5° F.

A recent pharmaceutical application of acetone is in dissolving the salt of calabash-curare as a preliminary step in purifying toxiferine. The patent also outlines subsequent steps in the process.

Another new pharmaceutical use for acetone is in the extraction of stings and poison glands of bees. The extract is then evaporated in vacuum at 20° and extracted first with a concentrated alcohol, such as ethanol or methanol, and with 55-65% aqueous alcohol.

New uses for acetone are discovered frequently in the paint, varnish and lacquer industries where this chemical has long been one of the most useful solvents. One recent application is found in a process for a drying oil composition claimed to possess improved hardness and adhesion, as well as greatly reduced wrinkling tendencies. It comprises an unsaturated ketone condensation product of acetone in which tung oil is dissolved.

A rapid, uniform method of producing a luminous coating for electric lamps was discussed recently in which luminescent particles are dissolved in a medium of acetone, nitrocellulose and dimethyl phthalate. Another inventor recommends the addition of colloidal graphite dissolved in acetone and aluminum to lacquer that is to be used on aircraft.

Among the new uses for acetone in organic synthesis is one in which it is used in preparing a pure grade of hydroxylamine hydrochloride. Acetone is reacted with a mixture of nitric acid and hydrochloric acid to produce chloroisonitrosoacetone, which is dissolved in water and reacted with chlorine gas, then hydrolyzed in dilute hydrochloric acid.

The preparation of new emulsifying agents which disperse calcium soap also involves the use of acetone. Lauryl chloride is condensed with a sulphonic acid of para-toluidine or para-chloroaniline in the presence of caustic soda ash or other alkalies and acetone.

An improved method of manufacturing vinyl crotonate makes use of acetone. Acetylene is brought into contact with crotonic acid in the presence of acetone and in the presence of a catalyst at a temperature not exceeding about 50° C.

One of the foremost producers of this basic chemical for many years, U.S.I. offers acetone of highest purity to meet essential needs.

**TECHNICAL DEVELOPMENTS**

Further information on these items may be obtained by writing to U.S.I.

**A textile sample dryer** is offered which is claimed to perform both drying and conditioning operations on samples of materials in from one to two minutes. Swatches are placed on a wire screen on the disc or rotor attached to the inside of the door of an insulated cabinet, and rotated first with door closed, then opened. (No. 720)

U S I

**A portable parts-testing unit** has been developed which the maker says can subject specimens to any temperature between 165° F. and 100° below zero. Using carbon dioxide as refrigerant, the unit may be attached to a small enclosure built around test parts. A small electric heater provides heat. (No. 721)

U S I

**A moisture-resistant white pencil tracing cloth** has been put on the market which is said to guard against spots from perspiration or moist hands and climatic conditions. It is described as having glass-like transparency and a fine-tooth surface. (No. 722)

U S I

**A floor cleaning and disinfecting powder** is offered which is said to form a non-caustic solution that is effective on floors of wood, tile, terrazzo, cork, linoleum, and rubber. The maker says it rinses readily, does not turn rancid, and is harmless to the skin. (No. 723)

U S I

**A resin-base paint** has been developed which is said to protect the surfaces of metal, wood, and concrete against attack by organic and inorganic acids, alkalis, salts, alcohol, gasoline, oils, and moisture. It is applied by brushing, spraying or dipping. (No. 724)

U S I

**A salve for treating burns** has been developed which is claimed to offer ease of application, relief of pain, acceleration of rate of healing, shortening of disability period, and the prevention of disfiguring scars in many cases. (No. 725)

U S I

**An acid rust solvent and metal cleaner** has been developed for ferrous metals and galvanized sheets. The maker says it will remove oxides quickly in cold solutions without attacking the metal, and that it is fumeless and will not damage clothing, shoes, or hurt hands in any way. (No. 726)

U S I

**A paint-type marking crayon** is offered for use on cold surfaces of steel, lumber, rubber, stone, glass, porcelain and plastics. Colors include white, black, red, blue, green, and yellow. (No. 727)

U S I

**A flame-proofing material** is offered for cloth and fabric that is said to prevent them from igniting even when exposed to actual flames. The maker says it is non-injurious to wools, cotton or rayon, non-injurious to the skin, and non-poisonous and odorless. (No. 728)

**U.S.I. INDUSTRIAL CHEMICALS, INC.**

60 EAST 42ND STREET, NEW YORK



BRANCHES IN ALL PRINCIPAL CITIES

**ALCOHOLS**

Amyl Alcohol  
Butanol (Normal Butyl Alcohol)  
Fusel Oil—Refined

**Ethanol (Ethyl Alcohol)**

Specially Denatured—All regular and anhydrous formulas  
Completely Denatured—all regular and anhydrous formulas  
Pure—190 proof, C.P. 96%, Absolute  
U.S.I. Denatured Alcohol  
Anti-freeze

Super Pyro Anti-freeze  
Solox Proprietary Solvent  
Solox D-I De-icing Fluid

**ANSOLS**

Ansol M  
Ansol PR

**ACETIC ESTERS**

Amyl Acetate  
Butyl Acetate  
Ethyl Acetate

**OXALIC ESTERS**

Butyl Oxalate  
Ethyl Oxalate

**PHTHALIC ESTERS**

Amyl Phthalate  
Butyl Phthalate  
Ethyl Phthalate

**OTHER ESTERS**

Dialal  
Ethyl Carbonate  
Ethyl Chloroformate  
Ethyl Formate

**INTERMEDIATES**

Acetoacetanilide  
Acetoacet-ortho-aniside  
Acetoacet-ortho-chloranilide  
Acetoacet-ortho-toluidide  
Acetoacet-para-chloranilide  
Ethyl Acetoacetate  
Ethyl Benzoylacetate  
Ethyl Sodium Oxalacetate  
Registered Trade Mark

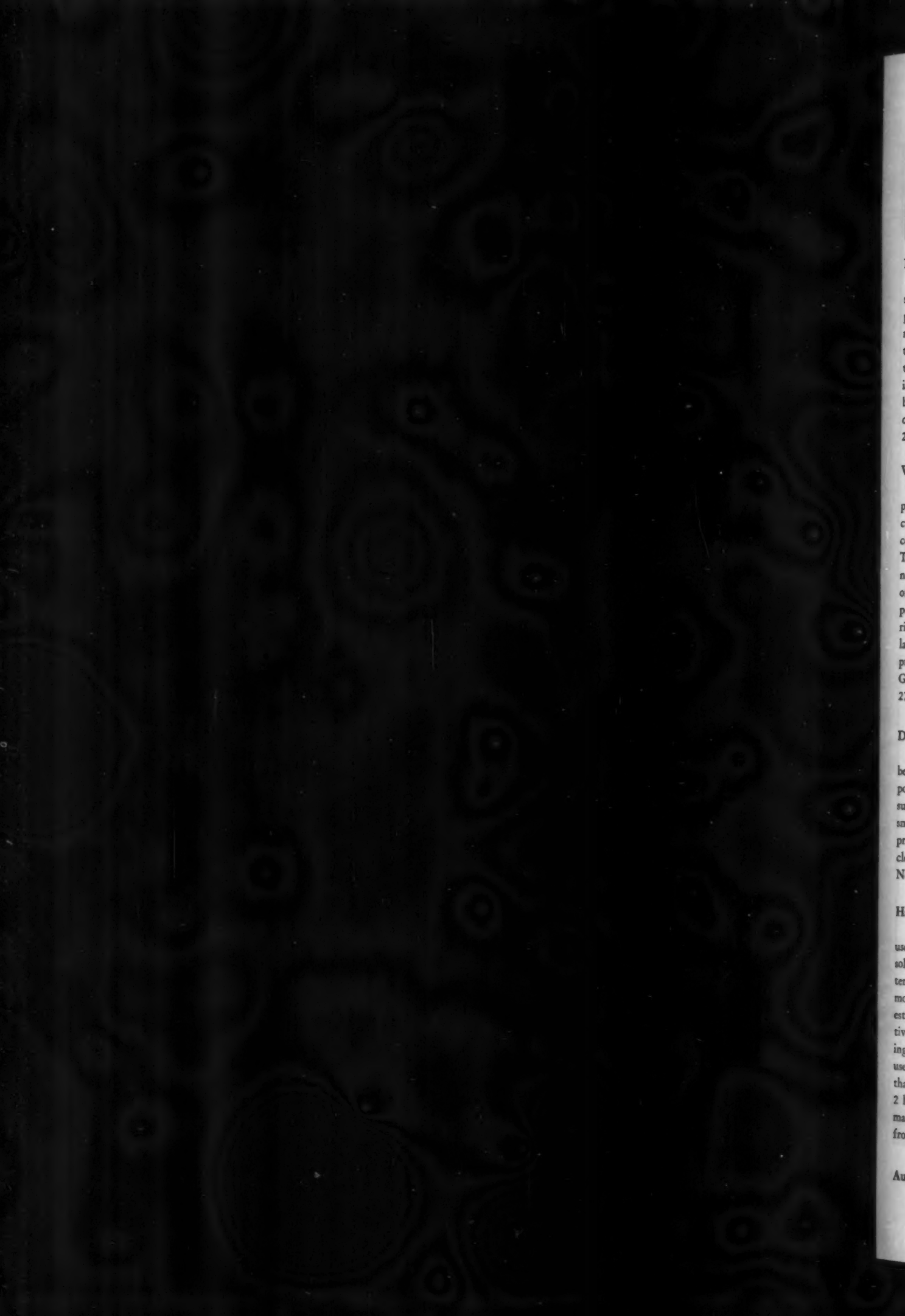
**ETHERS**

Ethyl Ether  
Ethyl Ether Absolute—A.C.S.

**OTHER PRODUCTS**

Acetone  
Collodions  
Curboy B-G  
Curboy Binders  
Curboy X (Powder)  
Ethylene  
Ethylene Glycol  
Indalone  
Nitrocellulose Solutions  
Potash, Agricultural  
Urethane  
Vacatone





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# PRODUCTS

## Detergent from Resins

A sulfonated resin product suitable for dispersing and detergent purposes is formed from the resinous residue remaining after separation of the rosin from the total resinous extract of pine wood. The residue used is insoluble in petroleum hydrocarbons. A. L. Rummelsburg, to Hercules Powder Co. U. S. Patent No. 2,308,029.

## Washing Agents

Cleaning and washing agents are produced by the reaction of 1 molecule of fatty oil, 2 of anhydrous glycerol and 3 of fuming sulfuric acid. The resulting sulfonated product is neutralized with a 30 per cent solution of caustic soda or with a lime suspension. The neutralization is carried at 35-40° C. in the presence of a large volume of already neutralized product. Palmolive Binder & Ketels G.m.b.H. German Patent No. 709,276; through *Chem. Abs.*

## Dry-cleaning Composition

An aliphatic hydrocarbon as benzene or other fat-dissolving compounds or their halogen derivatives such as carbon tetrachloride, and a small quantity of an aliphatic alcohol, preferably methanol, are used for dry cleaning. G. Endres. German Patent No. 708,934; through *Chem. Abs.*

## Hard Water Soap

A soap composition adapted for use in hard water consists of a water-soluble soap and a special salt. The latter may be an alkaline metal, ammonium or organic amine salt of an ester of an  $\alpha$  sulfonic-acid derivative of a saturated fatty acid containing 12-22 carbon atoms. The alcohol used for esterification contains not more than 3 carbon atoms and not more than 2 hydroxyl groups. The soap and salt may be combined in ratios varying from 98 parts of soap to 2 of salt, to

50 parts by weight of each. M. A. Kise and J. F. Vitcha, to The Solvay Process Co. Canadian Patent No. 413,391.

## Dispersing Agent

The lower alkyl, aryl esters of sulfonated higher saturated hydroxy and polyhydroxy fatty acids are used as wetting and dispersing agents. Bohme Fettchemie G.m.b.H. German Patent No. 709,088; through *Chem. Abs.*

## Moth-proofing Agent

Moth-proofing agents are made from halogen-substituted acylamino sulfonic acids by acylating an aminobenzene sulfonic acid containing at a nitrogen atom at least one exchangeable hydrogen atom, with an ester or halide of diphenyl ether carboxylic or diphenyl sulfide carboxylic or sulfonic acids. The two components are so chosen that at least one halogen atom is present in the final acylated compound. H. Martin, R. Hirt and H. Zaeslin, to J. R. Geigy A.-G. U. S. Patent No. 2,299,834.

## Nacconol as Metal Cleaner

Tests on the effectiveness of "Nacconol" as a metal-cleaning compound are reported in two recent articles by O. M. Morgan and J. G. Lankler, National Aniline Division, Allied Chemical & Dye Corp., appearing in the September 15, 1942, issue of the Analytical Edition of *Industrial and Engineering Chemistry* and the October 1942 issue of the regular edition of this same publication. The first article describes an ingenious quantitative method for the evaluation of metal-cleaning compounds. Use is made of the fact that mineral oil fluoresces under ultra violet light, and that this fluorescence may be photographed, to provide a convenient means for detecting and recording oil residues on metal sur-

faces both before and after cleaning.

The second article makes use of this test method to report comparative observations on the cleaning efficiency of "Nacconol" and other alkaline cleaners for use on metal surfaces. The addition of a surface active agent was found to exert a definite improvement in the metal cleaning efficiency of alkalies and mixtures of alkalies. Cleaning time, operating temperatures and concentration of cleaning solution could all be reduced when working with the addition of "Nacconol NR", it was found. Cleaning ability was found not to be affected by the hardness of the water. Specifically, one set of tests indicated that a cleaner containing 5% "Nacconol NR" is more efficient than one containing 5% rosin soap when used under hard water conditions. It was found necessary to use 10% rosin soap in the cleaner to equal a product containing 5% "Nacconol NR".

## Advertise Insect Repellants

Advertising and advertising plans for the promotion of two new insects repellants in the consumer market were announced last month. Coty, Inc., New York, advertising in newspapers and two national magazines used full-pages to feature their new repellant in the form of a cream that has been developed, apparently, as a result of the military need for such a product. The Skol Co., New York, were reported planning to use dominant newspaper and national magazine space to back the sale of their "Skat" liquid repellant to civilian consumers. This is the first example of the sale to civilian consumers of a product that had been initially developed for military use. Both firms make products in the cosmetic or toilet goods classification and thus the fact is pointed up that companies in that category are going into the field of insect repellants. Others, judging by recently published bids for insect repellants, include: Miner's, Inc., Helena Rubenstein, Pond's Extract Co., and Chadakoff Chemical Products, all of New York, and Whitmire Research Corp., St. Louis.

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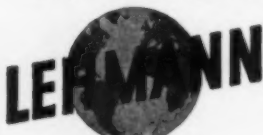
PHILADELPHIA  
CHICAGO  
SAN FRANCISCO

WARTIME *efficiency in*  
PEACETIME *production...*

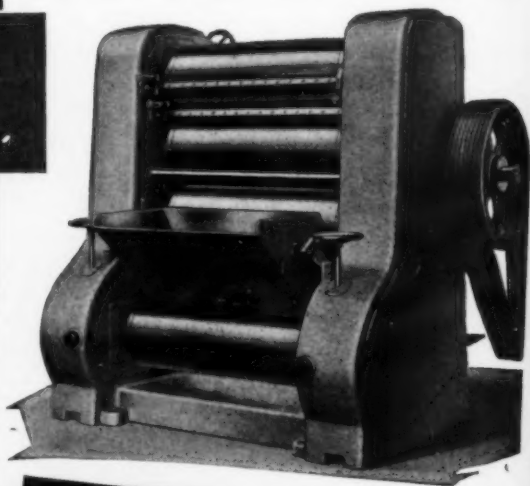
WILL post-war production be conducted on a higher plane of efficiency as a result of war-time experiences? We believe so. Also we believe that modern, proficient machines will be of greater importance than ever in the economic life of the nation.

Thus the high production, sturdiness, ease of operation and reliability of LEHMANN soap mills will take on new value, for they give that extra service which marks the difference between ordinary

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LYNDHURST, NEW JERSEY

# PATENTS

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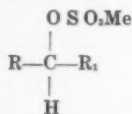
Registered Attorneys  
PATENT AND TRADE-MARK CAUSES

402 Bowen Building,  
Washington, D. C.

Complete copies of any patents or trade-mark registration reported below may be obtained by sending 25c for each copy desired to Lancaster, Allwine & Rommel. Any inquiries relating to Patent or Trade-Mark Law will also be freely answered by these attorneys.

No. 2,320,478, Toilet Preparation, patented June 1, 1943 by George Sperti, Cincinnati, assignor to The Institution Divi Thomae Foundation, Cincinnati. A toilet preparation for topical application comprising a preparation which depresses the respiration of the tissue to which it is applied combined with a respiratory stimulating agent which stimulates the tissue respiration as determined by manometric measurements and thereby compensates at least in part for the depressing effect of the preparation.

No. 2,321,020, Detergent and Method of Making It, patented June 8, 1943 by Emil E. Dreger, Summit, N. J., and John Ross, New York, assignors to Colgate-Palmolive-Peet Co., Jersey City. A sulphation product of the following general formula



containing at least fifteen and not more than twenty-one carbon atoms wherein R represents a straight chain alkyl group containing at least five carbon atoms, R<sub>1</sub> is a straight chain alkyl group containing at least three carbon atoms and Me is a radical of the group consisting of alkali metals, alkaline earth metals and ammonium.

No. 2,321,023, Method of Applying Parasitocides, patented June 8, 1943 by Lyle Goodhue, Berwyn, Md., and

William N. Sullivan, Washington, D. C., assignors to Claude R. Wickard, as Secretary of Agriculture of United States of America, and his successors in office. The method of producing an aerosol comprising releasing into the atmosphere in the form of finely divided droplets a solution under pressure of not more than 10 parts of the material to be dispersed as an aerosol in not less than 90 parts of a solvent, the vapor pressure being such that the solvent will boil violently under atmospheric conditions, whereby the violent boiling of the solvent will cause the droplets to be further subdivided, so that when all of the solvent has evaporated the solute material will remain colloiddally suspended in the atmosphere.

No. 2,321,947, Manufacture of Soap, patented June 15, 1943 by Leopold Sender, Philadelphia, and James H. Wilson, West Roxbury, Mass., assignors, by direct and mesne assignments, to The Sharples Corp., Philadelphia. In the separation of insoluble impurities from a soap nigre containing free alkali, the process comprising adding a source of acid to the nigre and reacting the acid with the free alkali of the nigre until the quantity of the free alkali is substantially reduced, and thereafter removing insoluble impurities from the acid treated nigre, the reaction between the acid and nigre constituents being conducted in such a manner as to avoid substantial splitting of the soap of the nigre.

No. 2,322,066, Polish and Process of Making It, patented June 15, 1943 by Lois I. Smith, Klamath Falls, Oreg. The process of making a polish which consists in boiling about ¼ pound of comminuted castile soap in about 1 cup of water until fluid soap is obtained, then pouring the fluid soap into about 6¼ pounds of whiting together with about 1½ ounces of aqua ammonia, 1 ounce of olive oil, and ½ ounce of oil of sassafras, then thoroughly mixing and kneading the resultant until a relatively stiff moldable consistency is obtained.

No. 2,322,723, Organic Insecticide Composition, patented June 22, 1943 by David W. Young, Roselle, N. J., assignor, by mesne assignments, to Jasco, Inc., a corporation of Louisiana. A persistent stomach poisoning insecticide spray composition com-

prising essentially a normally solid organic insecticide of heterocyclic composition in powdered form suspended in a viscous to plastic iso-olefin polymer having an average molecular weight of above about 1,000.

## Synthetic Detergents

A synthetic detergent consists of an alkyl phenol sulfonate in the form of the free sulfonic acid. The alkyl hydrocarbon radical attached to the benzene ring contains at least 12 carbon atoms. A methyl radical may also be attached to the ring.

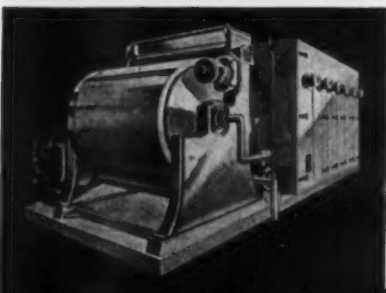
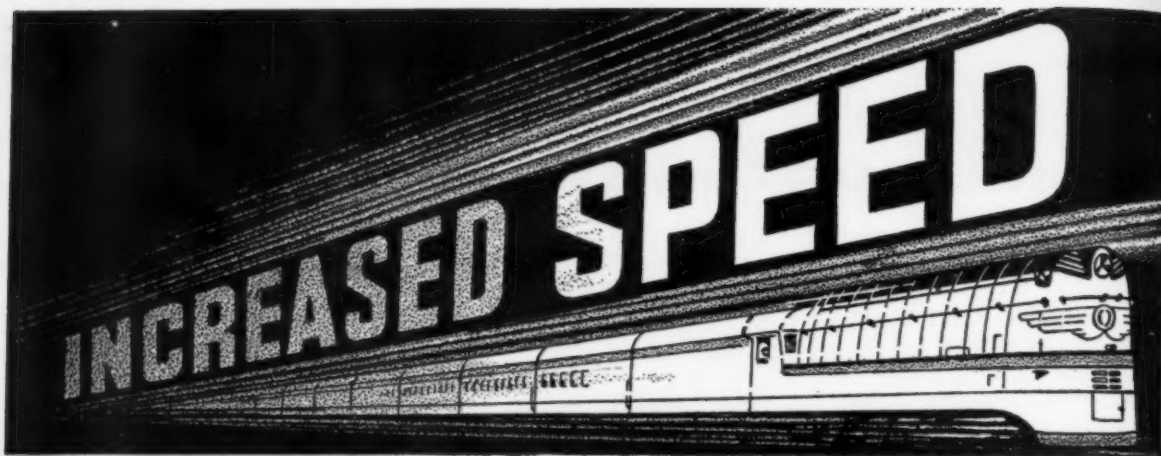
The composition may also be a mixture of alkyl derivatives of an aromatic sulfonate. The alkyl groups then correspond with the hydrocarbons of an aliphatic hydrocarbon mixture at least 80 per cent of which boils between 210 and 320° C., and over a maximum range of 55°.

Side-chain aromatic sulfonates are manufactured by chlorinating a hydrocarbon mixture of the type of a petroleum distillate, condensing the chlorinated hydrocarbons with an aromatic compound, and sulfonating the resulting side-chain aromatic compounds. The hydrocarbon mixture is chlorinated to a degree such that the chlorinated mixture contains an amount of organically combined chlorine corresponding to more than one atom but not more than two atoms of chlorine per average molecule of hydrocarbon. Lawrence H. Flett, to Allied Chem. and Dye Corp. Canadian Patents 413,166, 413,167 and 413,168.

## Refining Tall Oil

The method is to dissolve a dark-colored higher fatty acid in a saturated liquid aliphatic hydrocarbon having at least 4 carbon atoms, in the proportion of at least 2 parts of solvent to 1 of higher fatty acid. The hydrocarbon solution is extracted at a temperature not greater than 5°C. with liquid sulfur dioxide to yield a hydrocarbon solution of purified lighter-colored higher fatty acid and a liquid sulfur dioxide solution of dark-colored and unstable constituents. Robert L. Brandt, to Colgate-Palmolive-Peet Co. U. S. Patent 2,308,431.





In producing flakes for granulated soaps, toilet cakes or packaging, high speed output can often be an item of great saving. With the New Proctor Flake Soap System, from the hot liquid soap in the kettle or crutcher to the dried flakes requires only 6 to 14 minutes and capacities may be obtained from 750 to 6000 lbs. per hour, according to flake thickness, character of soap, etc. At this stepped-up production, quicker deliveries are assured and there are tremendous savings in floor space and equipment. Complete details are contained in a new 16-page illustrated catalog that is yours for the asking.

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## NEW PROCTOR *Flake Soap* SYSTEM

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MUNN is always uniform. It never varies in acid number, saponification number, color or absolute freedom from foreign matter

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# EQUIPMENT

**I**F YOU want additional information on any of the items described below or if you want any of the bulletins, catalogs, etc., write to the MacNair-Dorland Co., Inc., 254 West 131st St., New York, mentioning the number of the item.

## 957—P&G War Booklet

Procter & Gamble's contribution to the winning of the war—is told in a fully illustrated 36-page booklet: "Vital To Victory," which has just been released. A picture narrative tells of P&G's production of soap and its by-product glycerine needed for a variety of war purposes; the P&G Defense Corp. shell loading subsidiary; the use of soap in the manufacture of synthetic rubber; for processing leather, fabrics and metal, and the production of edible fats for food purposes. The foreword for this booklet was written by R. R. Deupree, president of P&G.

## 958—Hercules Dresinate Folder

Properties and uses of "Dresinates," water soluble resins, in soluble oils are discussed in a new booklet recently issued by the paper makers chemical department of Hercules Powder Co., Wilmington, Del. "Dresinates," which come in powder form—"Dresinate X" and liquid form—"Dresinate 90," are used for dispersing disinfectants throughout water and in other emulsions. Tables giving properties of liquid and powdered "Dresinates" and figures and tables showing the stability of emulsions made with "Dresinate 90" are included in the booklet, as well as directions for preparing a typical emulsion. Copies of the booklet can be obtained by writing to the company.

## 959—Edge Moor Bulletin

Edge Moor Iron Works, machinery and equipment manufacturers, Edge Moor, Del., recently issued a

four-page catalog folder illustrating and describing the company's horizontal mixers, blenders, steam jacketed cooking kettles, high velocity evaporator and still. The folder—Bulletin 117—points out that these machines are designed for blending and mixing of dry products such as tooth powder and also for blending and mixing semi-liquids and pastes of all kinds.

## 960—Folder On Flooring

The application, installation and a general description of "Servicised" asphalt industrial plank flooring is contained in a recent brochure issued by Servicised Products Corp., Chicago. This flooring, developed for manufacturing plants, loading platforms, freight houses, storage plants, etc. is a resurfacing medium for worn concrete or wooden floors. Literature and a list of installations is available on request.

## 961—Booklet on "Kelite"

Kelite Products, 909 E. 60th St., Los Angeles, has published a booklet discussing "Kelite" dishwashing compound with special stress on the product's pH characteristics for control of all variables, such as water hardness, contamination and volume of work.

## Synthetic Waxes

Derivatives of hydrogenated castor oil such as the glycol monoesters of 12-hydroxystearic acid can

be prepared by the reaction of 12-hydroxystearic acid with ethylene glycol is xylene, using toluene sulfonic acid as a catalyst. Ethylene glycol diester was obtained as a hard brittle noncrystalline material melting at 90-2°C. Trimethyl glycol diester was obtained as a crystalline material melting at 82-3°C. These synthetic products may be generally described as solid esters of the nonemulsifying type. From a preliminary study of their properties they should have considerable interest as wax substitutes. Their melting points, unusually high for polyhydric fatty-acid esters, their freedom from color and odor, and their good stability, suggest application as synthetic waxes with special properties for polishes and similar industrial materials. Their applicability is further widened by their ready conversion into solid esters of the emulsifying type. Saul A. Bell and Abraham Taub. *J. Am. Pharm. Assoc.* 32, 115-18 (1943).

## Domestic Vegetable Oils

Since olive-oil foots, so important for the production of special textile soaps, have become so scarce, certain other domestic oils were investigated as possible substitutes for olive oil.

Samples of completely refined peanut oil, semi-refined pecan oil, imported edible grade olive oil and crude safflower oil were examined as to composition, spectral transmittance and other properties. None of these oils simulated olive oil in composition. Peanut and pecan oils appear capable of modification to produce a product chemically similar to olive oil, and for some purposes can replace olive oil without modification. Pecan oil should yield a product on sulfation which would compare favorably with sulfated olive oil.

The production of pecan oil under present market conditions with regard to prices for edible oils and seedling pecan nuts does not appear to be very attractive, unless the cost of processing pecans for oil can be greatly reduced. W. G. Bickford, G. E. Mann and K. S. Markley. *Oil & Soap* 20, 85-9 (1943).

## SYNTHETIC DETERGENTS . . .

**Composition, characteristics and uses of some of the more common non-soap synthetic detergents now on the American market . . . a practical discussion in a series of two articles by Dr. Foster D. Snell beginning in the next issue of SOAP AND SANITARY CHEMICALS.**

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## KRANICH SOAP COMPANY

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Brooklyn, N. Y.

**SOAPS**

## Copaiba and Copaiba Oil (From Page 27)

place in a small mortar 1 gram of the substance, powdered or crushed if necessary, and add 10 cc. of purified benzoin. Triturate well for 1 or 2 minutes, filter into a test tube, and add to the filtrate 10 cc. of a fresh aqueous solution of cupric acetate (1 in 200). Shake well and allow the liquids to separate: the benzoin layer should not show a green color."

In years past, copaiba balsam was frequently adulterated with gurjun balsam and with African or Illurine balsam.

### Gurjun Balsam

THIS balsam is obtained from various species of *Dipterocarpus* (fam. *Dipterocarpaceae*), trees growing wild in the great forests of southeast Asia, especially Burma, East India and French Indo-China. It was exported from Moulemein, Akyab, Singapore and Saigon. The color of gurjun balsam in reflected light is greenish-gray, slightly turbid and fluorescent; in transmitted light red-brown and clear. Odor and taste of gurjun balsam remind of copaiba.

According to Gildemeister and Hoffmann,<sup>2</sup> the constants of gurjun balsam vary between the following limits:

Specific Gravity: 0.950 to 0.970  
Optical Rotation:  $-23^{\circ}$  to  $-70^{\circ}$   
Refractive Index  
at  $20^{\circ}$ : 1.510 to 1.516

Steam distillation yields 60 to 75 per cent of volatile oil.

Adulteration of copaiba with gurjun balsam was practiced in former years mainly in Europe. Transport of gurjun balsam to Brazil would make it much too high priced for use in copaiba, especially under present conditions.

The National Formulary, Seventh Edition, recommends the following test for the presence of gurjun balsam in copaiba:

"Mix one drop in nitric acid and 3 cc. of glacial acetic acid in a test tube and carefully add four drops of the oil, separated from the copaiba by distillation with steam; no reddish zone appears, nor does the liquid become reddish or purplish after shaking."

### African Copaiba or Balsam of Illurine

THIS balsam originates from the Niger region in western Africa,

probably from *Oxystigma Mannii* Harms. (fam. *Leguminosae*). According to Gildemeister and Hoffmann,<sup>3</sup> it has the following properties:

Specific Gravity  
at  $15^{\circ}$ : 0.917 to 0.930  
Optical Rotation:  $+5^{\circ}45'$  to  $+39^{\circ}$   
Refractive Index  
at  $20^{\circ}$ : 1.50574 to 1.50811  
Acid Value: 0.5 to 9.3  
Ester Value: 0.0 to 5.6  
Solubility: Soluble in 98% alcohol, addition of more than two volumes causes faint opalescence; soluble in ten volumes of 95% alcohol with opalescence.

The National Formulary recommends the following test for the presence of African copaiba in true (South American) copaiba:

"The volatile oil separated from copaiba by steam distillation does not boil below  $250^{\circ}\text{C}.$ , and shows an angle of rotation, in 100 mm. tube, of not less than  $-7^{\circ}$  at  $25^{\circ}\text{C}.$ "

Comparing their physico-chemical constants, it is evident that gurjun balsam and African copaiba, especially combinations of the two, represent rather dangerous adulterants of true copaiba. The high laevo-rotation of gurjun balsam could be offset by addition of the dextro-rotatory African copaiba. Fortunately, gurjun balsam and African copaiba are, under present conditions, not easily available and not sufficiently low priced to suit this purpose.

The adulterants of copaiba, for which one should at present be on the lookout, are, as pointed out, fatty oils and kerosene. It is advisable to examine each can of crude balsam individually by odor. Whenever any bynote of kerosene is noticed, a sample of the questionable product should be submitted to a distillation test. If the amount of kerosene is found to exceed two or three per cent, an exact determination by the oleum test, as given by the United States Pharmacopoeia, Twelfth Edition, is to be recommended:

"Place 20 cc. of fuming sulfuric acid in a graduated narrow-necked Babcock bottle, stopper, and place in an ice bath to cool, and then add slowly, drop by drop, from a pipette, 5 cc. of the oil, mixing it with the acid as added by gently shaking or rotating the bottle and keeping the temperature of the mixture at about  $60^{\circ}$  to  $65^{\circ}\text{C}.$  by repeated immersion in the ice bath. When agitation no

longer causes the mixture to become warm, shake it vigorously for about 30 seconds. Place the bottle on a water bath, and heat it between  $60^{\circ}$  and  $65^{\circ}\text{C}.$  for 10 minutes, keeping the contents of the bottle thoroughly mixed by shaking vigorously not less than 6 times during the heating period. (If the shaking at first is too prolonged and too vigorous, the escaping sulfur dioxide is likely to force some of the mixture out of the neck of the bottle.) Cool the mixture to room temperature, and add enough sulfuric acid (specific gravity about 1.84) to bring the oily layer into the graduated neck. Centrifuge the bottle and contents for 5 minutes at 1200 revolutions per minute, or for 15 minutes at 900 revolutions per minute, or allow it to stand overnight, lightly stoppered. The volume of the reddish or straw-colored viscous layer which separates on top of the dark acid does not exceed 1 per cent of the volume of the oil taken for the test."

It should be borne in mind that the presence of small quantities of kerosene in copaiba may be a matter of contamination rather than of adulteration, as the containers used by the natives for collecting the balsam are usually former gasoline cans.

### Chemical Composition of Copaiba

COPAIBA contains a volatile oil, resin and small quantities of acid. The resinous matter is hard, brittle, translucent, greenish-brown, almost odorless and tasteless. Its composition is relatively little known except that it contains several resin acids. Very probably the resinous matter results from oxidation or polymerization of the oil in the plant cells. The higher the content of oil, the less resinous substances copaiba contains.

### Oil of Copaiba

FOR the distillation of oil, the so-called "Para copaiba" (Brazilian States of Pará and Amazonas) is preferable to the product from Maracaibo (Venezuela) because the former contains up to 85 per cent of volatile or essential oil. The latter originates from *C. officinalis*, possesses a much more viscous consistency and, upon distillation, yields only 35 to 58 per cent of oil.

Gildemeister and Hoffman<sup>4</sup>, give the constants for the various types of copaiba oil; we shall enumerate only those which are today of commercial importance:



	Oils from Pará Copaiba	Oils from Manaos Copaiba	Oils from Maracaibo Copaiba
Sp. Gr. at 15°	0.886 to 0.910	0.9036 to 0.9095	0.900 to 0.905
Op. Rot.	— 7° to — 33°	— 16°4' to — 32°28'	— 2°30' to — 14°
Ref. Ind. at 20°	1.493 to 1.502	1.50045 to 1.53012	around 1.498
Acid Value	0 to 1.9	0.3 to 0.6	0.9 to 1.0
Ester Value	0 to 4 (in 1 case 13)	0.9 to 6.4	1 to 1.6
Solubility in 95% alcohol	Soluble in 5 to 6 volumes.	Soluble in 6 volumes.	Soluble in 5 to 6 volumes.

Oils distilled in our Clifton, New Jersey, factory from imported Pará and Amazonas copaiba, during the last few years, showed the following constants:

Specific Gravity at 15°: 0.901 to 0.905  
Optical Rotation: — 11°18' to — 14°22'  
Refractive Index at 20°: 1.4972 to 1.4990  
Saponification Value: 0.0 to 0.9

### Chemical Composition of Copaiba Oil

NONE of the numerous early investigations, which date back more than 100 years, gave a sufficiently clear insight into the composition of copaiba oil. About 50 years ago, Wallach<sup>5</sup> succeeded in proving that it consists mainly of *caryophyllene*,  $C_{15}H_{26}$ , the same bicyclic sesquiterpene which also occurs in oil of clove. Treatment of the fraction, b.p. 250 to 270°C., with glacial acetic acid and sulfuric acid, gave crystals (m.p. 96°C.) of *caryophyllene hydrate*,  $C_{15}H_{28}O$ . *Caryophyllene* was originally assumed to be a uniform compound but later found to consist of several isomerides:

*α-caryophyllene*. The optically inactive form. Deussen and Hahn<sup>6</sup> prepared from the *caryophyllene* of copaiba oil the nitroschloride and the nitrosate and named the optically inactive fraction of the sesquiterpene *α-caryophyllene*.

*β-caryophyllene*. The optically active form. It occurs in South American copaiba oils as the laevo-rotatory, in African oils as the dextro-rotatory modification. The presence of the laevo-rotatory *β-caryophyllene* in the various American copaiba oils was established by the Schimmel chemists<sup>7</sup> and later by Deussen and Eger<sup>8</sup>. It would lead too far to discuss the many investigations on the chemistry of *caryophyllene*, details of which are given by Gildemeister and Hoffmann<sup>9</sup>.

Suffice it to refer to the latest findings on the structure of this interesting sesquiterpene as described by Ruzicka and Wind<sup>10</sup>, by Ruzicka, Bardhan and Wind<sup>11</sup>, by Evans, Ramage and Simonsen<sup>12</sup>, by Ruzicka and Zimmermann<sup>13</sup>, by Ramage and Simonsen<sup>14</sup>, by Ganapath<sup>15</sup>, and by Rydon<sup>16</sup>.

Ruzicka and collaborators suggest the structural formula, as indicated below, for the main constituent of the various *caryophyllenes*.

*Cadinene*,  $C_{15}H_{24}$ . This bicyclic sesquiterpene was identified by van Itallie and Niewland<sup>17</sup> in copaiba oil from Dutch Guiana; m.p. of dihydrochloride, 116 to 117°C.;  $[\alpha]_D$  in chloroform solution, —36°5'.

The Schimmel chemists<sup>18</sup> isolated from copaiba oil a hydrocarbon which, under the influence of gaseous HCl gave 1-cadinene dihydrochloride, m.p. 113 to 115°C.;  $[\alpha]_D$  in a 2.5 per cent chloroform solution, —34°28'.

Other sesquiterpenes are possibly also present in copaiba oil.

A sesquiterpene alcohol,  $C_{15}H_{26}O$ . Van Itallie and Niewland<sup>19</sup> found in copaiba oil from Dutch Guiana a sesquiterpene alcohol, m.p. 113 to 115°C., which, upon treatment with anhydrous formic acid, gave a sesquiterpene with the following constants:

b.p. . . . . 252°C. at 759 mm. pressure.  
 $d_{15}^{20}$  . . . . . 0.952  
 $\alpha_D$  . . . . . —61.7°  
 $R_D^{15}$  . . . . . 1.5189

### Employment of Copaiba and Oil of Copaiba

According to the United States Dispensatory, copaiba is a gentle stimulant, diuretic, laxative, and, in

large doses, often active purgative. It produces, when swallowed, a sense of heat in the throat and stomach, and extends an irritant action throughout the alimentary canal, in fact to the whole mucous membrane, for which it appears to have a strong affinity. It sometimes occasions an eruption upon the skin resembling that of measles. Copaiba is used as a stimulant in chronic inflammations of the mucous membranes, such as chronic cystitis, and bronchitis. Its chief employment is in cases of gonorrhea. It was, formerly, much esteemed as a vulnerary and as an application to ulcers, but it is now seldom used externally. The volatile oil is more active than the resin.

The dose of copaiba is from 15 minims to one fluidrachm (1.0 to 4.0 cc.) 3 times a day or, in smaller quantities, repeated more frequently.

Copaiba finds wide application also in the scenting of soaps and cosmetics, where it serves as fixative. It blends well with ionones and cedarwood oil.

The oil of copaiba, on the other hand, cannot be considered a fixative. Because of its soft and rather faint odor it blends well into almost any composition and is employed mainly as a diluent in perfume compounds. Occasionally, oil of copaiba is used as a mellowing and blending agent in compositions of a too synthetic character. The soft odor of the oil tends to conceal predominant harsh notes of synthetic aromatics of isolates.★★

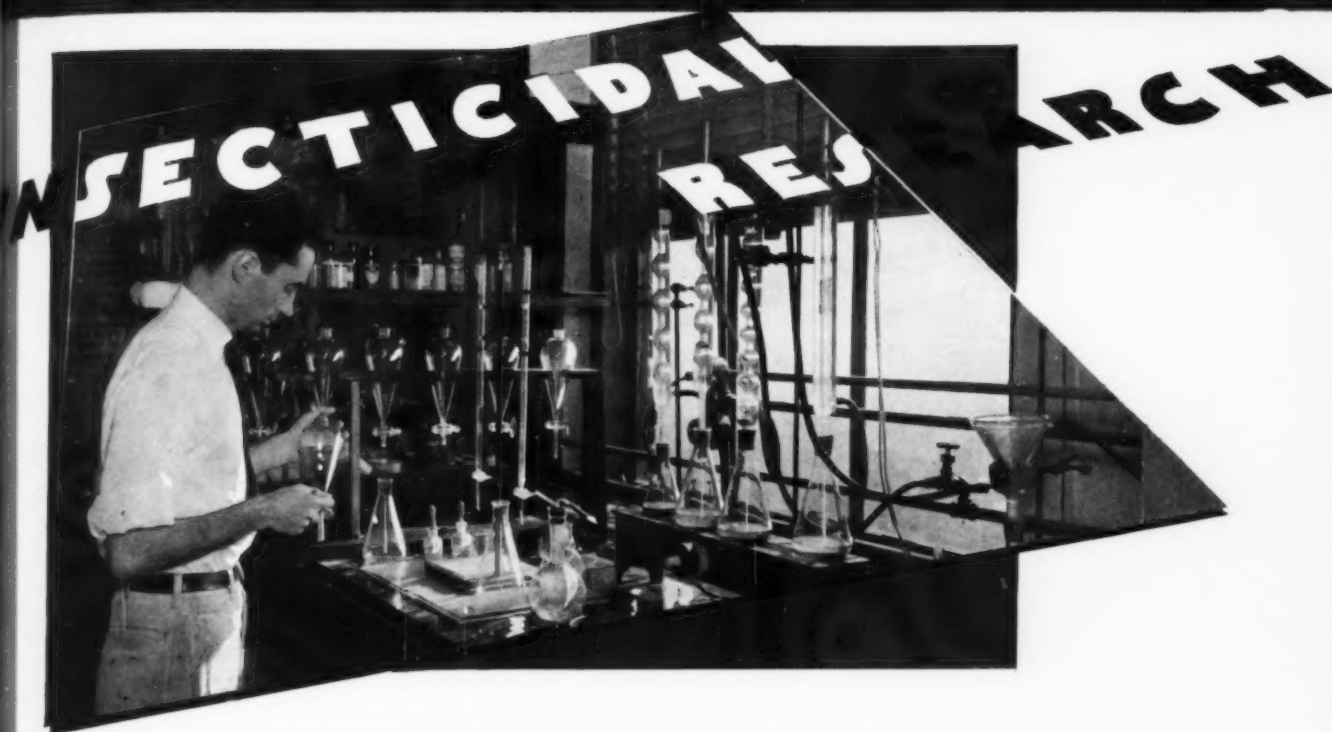
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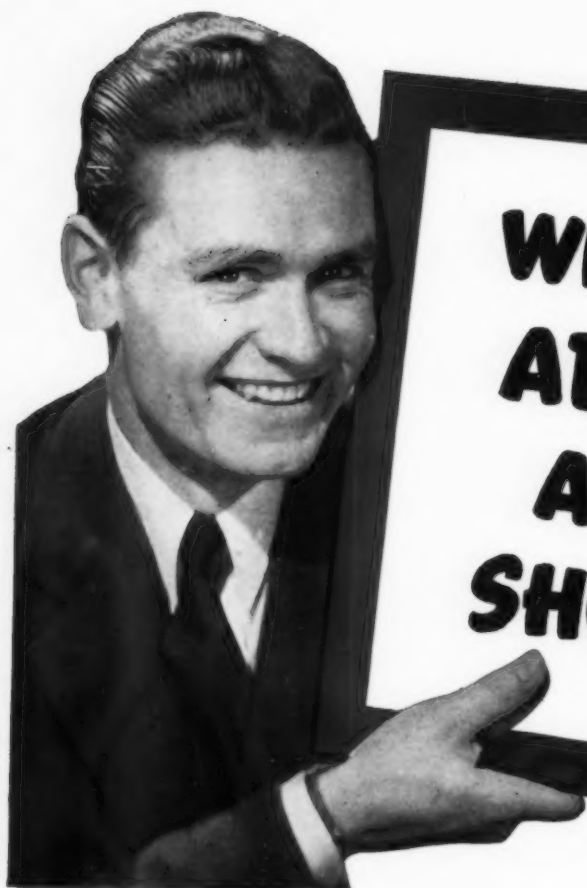
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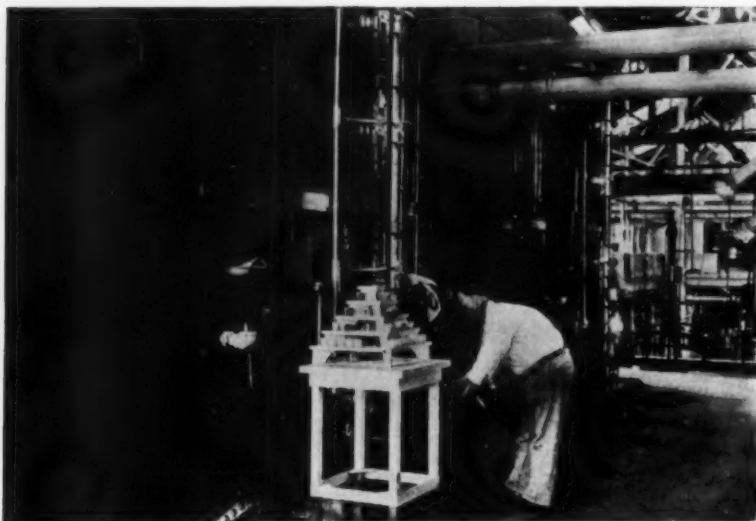
# INSIDE NEWS

AUGUST

PREPARED BY NATIONAL CAN CORPORATION, NEW YORK, N. Y.

1943

## New Process Doubles Sugar Yield From Cane Juice



To preserve vitamin content in the new sugar, a dehydrating method similar to that in drying blood serum is used.

By a new process of making sugar, a sweetener has been produced which retains the high mineral and vitamin content of the raw cane juice. This new sugar is seen as a boon to civilization in that it will help to combat tooth decay resulting from diets deficient in minerals and vitamins.

Preservation of the vitamins in the new sugar is made possible by processing the cane juice without the use of high temperatures, the process being a dehydrating method similar to that used in drying blood serum. In brief, this is how the sugar is made: The cane juice is filtered and treated with a solvent to kill the bacteria, the solvent evaporating and leaving nothing harmful in the sugar. Then the juice is frozen, giving pure water ice crystals intermingled with a solution which is more concentrated by virtue of the removal of the water contained in the ice crystals. Next, the frozen mass is chipped and placed in a centrifuge bowl which separates the sugar solution from the ice. A repetition of the freezing and centrifuging process several times produces a cold-process syrup which has not been subjected

to heat at any time. To this syrup is added a small quantity of a grain extract (wheat, flax, barley) which has the property of altering the attraction of the cane juice for the water.

This syrup is now readily dried to a crystal or powder form by any of the standard equipment used in dehydrating eggs or milk. The resulting product is a cream-colored, sweet-tasting substance with a distinctive flavor, differing from other sugar in that it has a tartness found in very sweet orange juice.

Analysis of the new sweetener shows a 3½% mineral content, together with the vitamins A, B complex, C and K.

The sugar yield from the cane juice is said to be doubled by the new process, as it is possible to obtain only about half the sugar of the juice by the customary crystallization method. (400)

Increasing the fish population by methods similar to the use of fertilizers for agriculture is a British idea. The addition of nitrogenous compounds and phosphates to the water in a small Scottish loch by a leading marine biologist, increased the flounder catch ten times by weight. (401)

## Fertilizer Seed Affects Seed Germination

Investigations show that the method of placing fertilizer on snap beans apparently affects the germination of the seed. The result shows that fertilizer mixed with the surface soil immediately before planting caused a reduction in seed germination ranging from 1% to as much as 35%. The injury appears to be greater when there is a scarcity of moisture, since the concentration of the fertilizer salt is then greater. Placing the fertilizer on top of the row caused a limited amount of injury in some of the planting and apparently took place when there was enough rainfall to carry the salt downward to the vicinity of the seed. The damage was least severe with this method when no rain fell for several days after planting.

Fertilizer placed in bands two inches to each side and two inches below the seed level apparently produced no injury to the seed and produced stands fully as good as those obtained in the unfertilized check row, irrespective of the soil moisture content. The seed germinated in, and the tap root grew into, a zone of soil between the bands of fertilizer which was comparatively free from any appreciable concentration of salts because of the limited lateral movement of the solution from the bands of fertilizer.

Fertilizer placed in a band directly beneath the seed reduced the stand of seedlings by as much as 22%. In most cases this was about as injurious as the first method reported where the fertilizer was mixed with the soil at the surface. (402)

## Cranberry Research

Increased yields of cranberry sauce were reported when the extraction of the berries with water at 185° to 195°F. for 20 to 25 minutes was used instead of the usual short time extraction at the boiling point. By employing this method it was stated that pectin is conserved and a sauce of improved quality results.

Cranberries were found to contain small amounts of riboflavin, pantothenic acid, and thiamin not previously reported. About 25% of the cranberry crops is now used for canned or other manufactured products. Cranberry juice and cranberry sauce were shown to be definitely bacterio-static for many bacteria of the food poisoning group. There were also indications that these foods had a marked cleansing action in the mouth. (403)

It is learned that upon the request of the Department of Agriculture, the War Production Board is allocating sufficient metal for the production of 150,000 pressure cookers needed for this year's canning season. It was stated that these pressure cookers will be distributed by the Department of Agriculture under a rationing system through County USDA War Boards. (404)



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## Motion Picture Demonstrates Canning Methods

A full color 16 mm. motion picture with sound called "Canning the Victory Crop," was released for public distribution. In order to assist the millions of Americans who are going to do their own canning this fall, home economists who have specialized in this field will demonstrate canning methods approved by the Department of Agriculture. There will also be a booklet containing time charts, recipes, and detailed instructions for "putting up" all kinds of fruits and vegetables available at cost for distribution among the audiences who view the film. (405)

## Now You See 'Em— Now You Don't!



American soldiers' lives are saved—in untold numbers—by modern techniques of "smoke screen" maneuvers. The "HC-SMOKE" must be carried in containers specially made for the purpose. Providing such containers for "smoke"—and for a variety of other military products too—is one of the many essential wartime jobs we are doing at National Can. (406)

## Bean Varieties Resist Halo Blight

Several selections of green and wax snap bean varieties have been made at a well-known university which give promise of being resistant to halo blight and anthracnose. These two diseases are the two most troublesome in the northern Maine climate. Selections were made from crosses of Hercules with Conserva and Hercules with Brittle Wax and show promise for canned and frozen packs. The strains are being continued for further tests. (407)

A new chemical compound, which really works in killing odors, including skunk, putrefaction odors, kitchen odors, etc., is being used by hospitals. (408)

## Technical Topics

**ALL-PURPOSE SOAP**—A new specification covering two types of all-purpose soap for use by army personnel throughout the world under varying conditions of water hardness, and for a wide variety of diverse uses such as hand washing, laundry, general cleaning, shaving, shampooing, etc., has just been released. Samples of the new soap are now being subjected to actual use tests as well as laboratory studies. (409)

**SYNTHETIC INSECTICIDE**—A new synthetic insecticide has recently been developed which promises to offer considerable assistance in augmenting depleted supplies of rotenone for agricultural crop protection. Tests of the new product at several State Experimental Stations are said to indicate that the addition of 2% to agricultural dusts cuts in half the amount of rotenone required to do an effective insect-killing job. (410)

**ALLIGATOR OIL**—The alligator, plentiful in Brazilian rivers, may be controlled by its new industrial value. In addition to the skins, the oil, mixed with fuel oil, is being used by an electric power plant. The liver oil has been found of value in cosmetics. (411)

**WATER SOLUBLE CELLULOSE** (sodium cellulose glycolate) is a gelatin substitute developed abroad which may replace in many products agar-agar, gum arabic and tragacanth, and may have uses as a stabilizer in food products. (412)

**RUBBER-LIKE CONDENSATION PRODUCTS** obtained from sulphur and olefines, or from polysulphides and other organic compounds, can be dissolved in crude and refined basic fractions of coal tar to produce clear solutions useful as paints and in impregnating. The rubber-like compounds are particularly resistant to the action of solvents and have been found important for technical purposes. (413)

**CHLORINATED PARAFFINS** when treated with alcoholic or concentrated aqueous caustic alkali, or subjected to pyrolysis, split off hydrogen chloride and form double bond compounds that may in turn be reacted with malic, maleic, and similar acids to form oily condensation products having drying properties which may be used directly in paints, varnishes, and lacquers. Air-dried films from the condensation products or their soluble ester products have a hardness comparable with that of copal varnish, while baked films are as hard as stove enamel. (414)

**ALLYL PHTHALATE** is being investigated for producing hard, heat-resistant finishes on metals. Its use for coating food containers after the war is also being discussed, although technical problems concerned with the sealing of such containers with the new coating have not as yet been completely solved. (415)

**BENTONITE** is suggested as a suspension agent for bituminous emulsion paints of high covering power suitable for coloring road surfaces, especially concrete, and for camouflage purposes. The 10-12 percent dispersions of bitumen may be pigmented with such materials as iron oxides, chromium oxide, or carbon black. Alkali caseinates may also be used to emulsify the bitumen. (416)

**SUBSTITUTE FOR SHELLAC**—Nigewax, produced by a Guatemalan insect resembling the Asiatic lac, was recently suggested as a possible substitute for shellac. Indians in the interior of Guatemala use the material to finish ornamented gourds and wooden art objects. Commercial production is not as yet reported. (417)

**RHENIUM** is being extracted from the flue dusts obtained in the roasting of Western molybdenum ores, utilizing a process developed by two Tennessee chemists. The rare metal has a high melting point, exceeded only by that of tungsten, and its density is exceeded only by those of platinum, iridium and osmium. (418)

**HYDROBROMIC ACID PRODUCTION** can be considerably facilitated and rendered more suitable for technical performance by carrying it out in a two-stage process. In the first stage of the process described, sulphur bromide is formed by dissolving sulphur in elementary bromine, while in the second stage the sulphur bromide, additional elementary bromine, and water are reacted to form hydrobromic acid and sulphuric acid. (419)

**SODIUM SULPHITE** is incorporated in a new British soap to combat dermatitis caused by formaldehyde synthetic resin glues employed in aircraft construction. An acid liquid soap is also offered for casein adhesives. (420)

*Every effort will be made to furnish additional information on these articles. Where such information is not obtainable, we will refer inquiries to the original source of the article. Write to National Can Corporation, 110 East 42nd Street, New York City. Please mention the number at end of article—also name of the magazine you saw it in.*

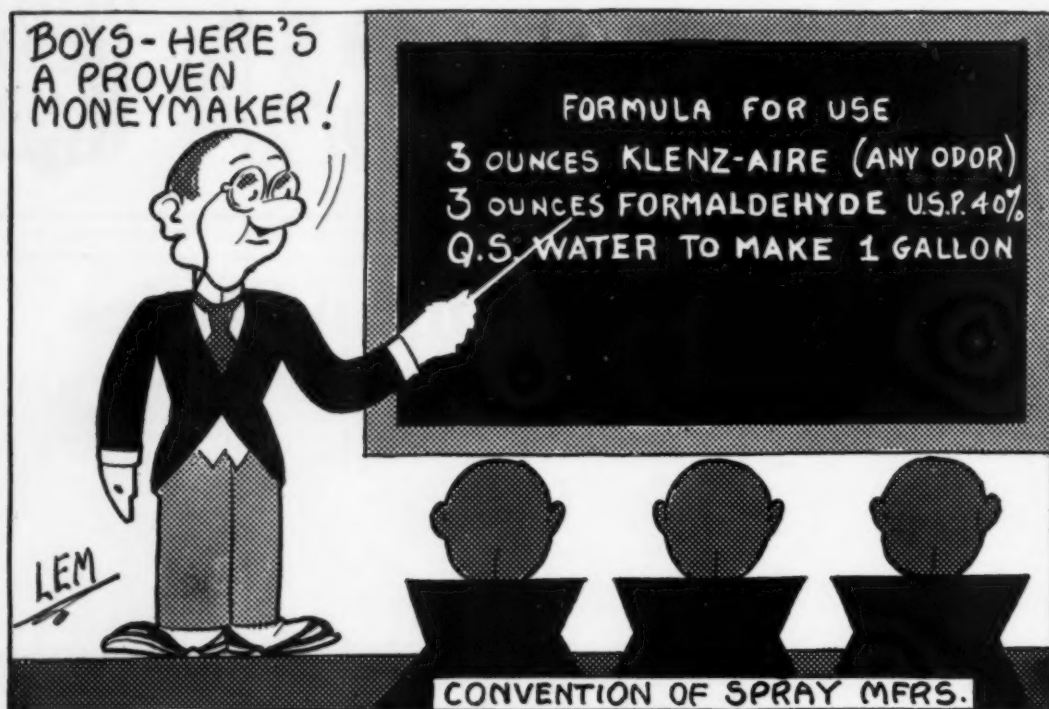
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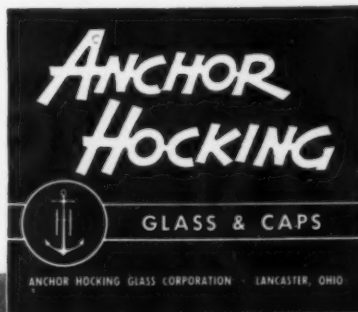
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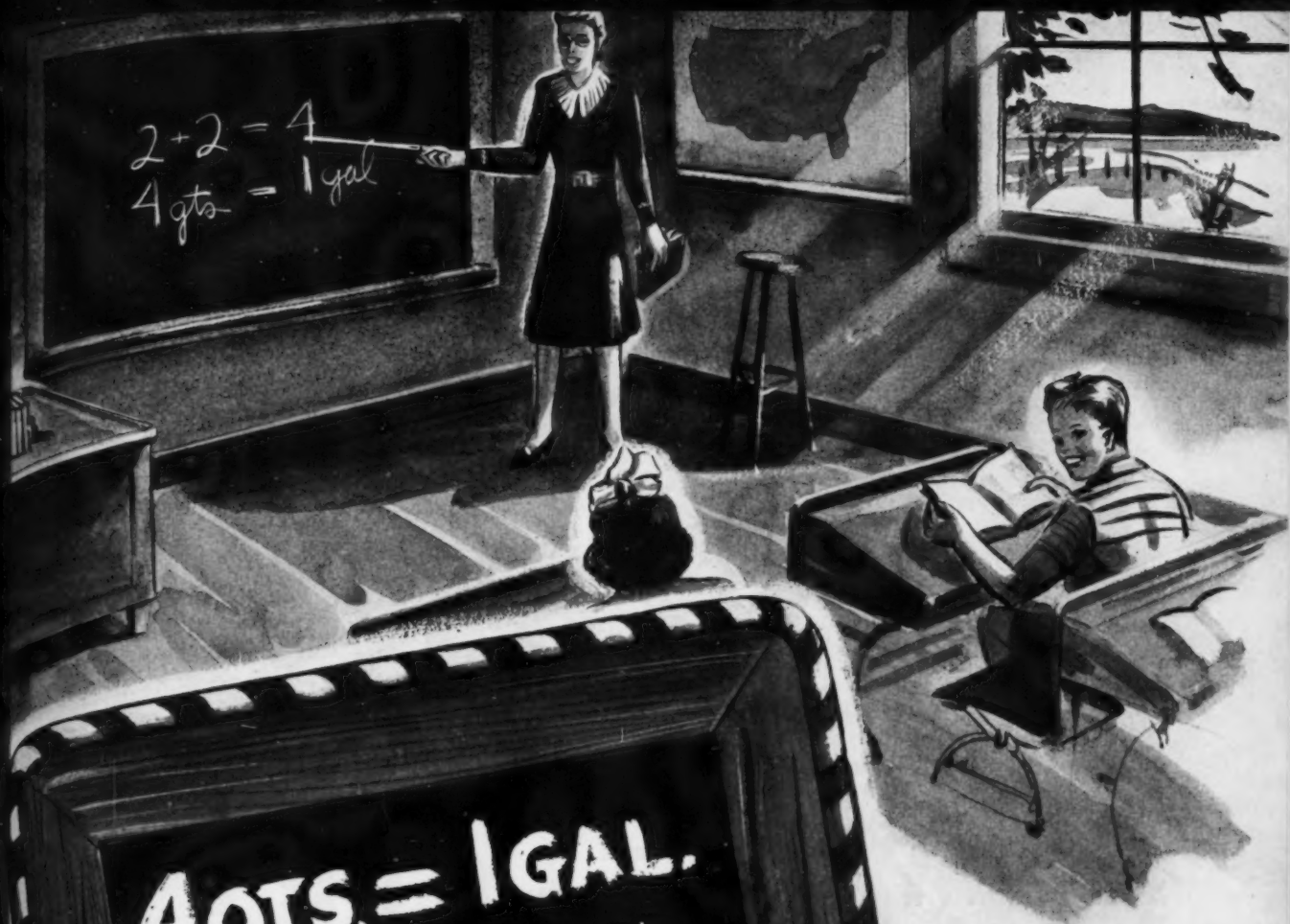
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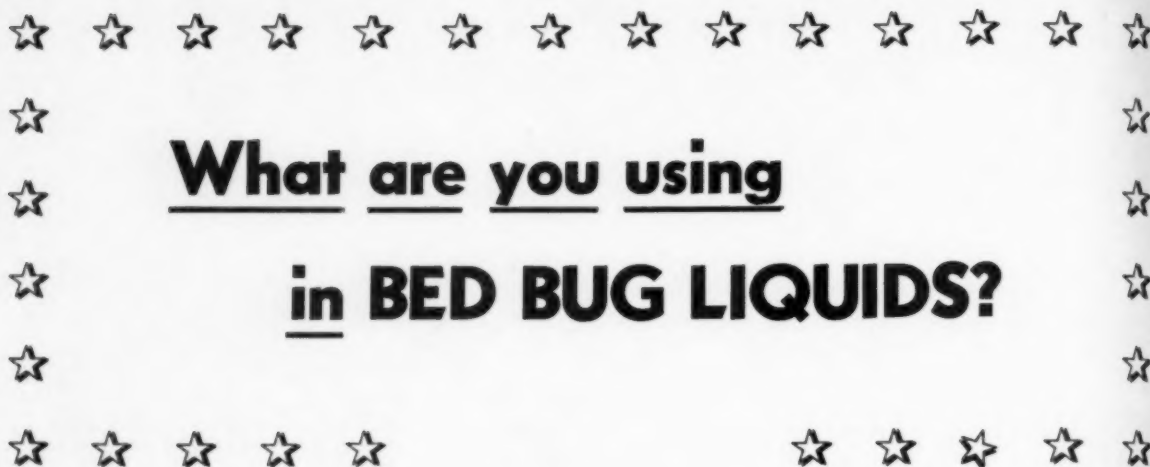


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Official Publication, Nat'l. Assn. of Insecticide & Disinfectant Manufacturers

**I**F WE can read the signs, strong and persistent attempts to kill the coloration amendment to the Insecticide Act of 1910, now pending in the Senate Committee on Commerce, may be successful. The procedure of raising doubts, muddying the waters, and then burying a bill or amendment by recommitment is an old and tested method of the skilled politician. It would appear that this is the treatment now being accorded the amendment to the Insecticide Act which would require coloration of fluorides, arsenicals, and other insecticide poisons.

Those interests who have opposed this proposed law know the ropes and are using them. Proponents of coloration, chiefly law enforcement officials whose sole interest in this case is adequate protection of the public health, are unfortunately not as well equipped politically to the detriment of the measure which they advocate.

Without a federal law on insecticide coloration, we are likely to have forty-eight different state versions of the same thing,—for, whether we like it or not, mandatory coloration is certain to come sooner or later. Without a federal law as a model on which the states could base their own laws, we are asking for chaos and confusion. And we feel that the very groups who oppose the Insecticide Act amendment are those who will suffer most from any such confusion. For as long as present conditions exist, there will continue

to be wholesale poisoning tragedies and the legislative hysteria which always follows.



**W**HEN insecticide needs of the country are discussed these days, including the requirements of our armed forces, the quantities mentioned are somewhat staggering. One estimate from the armed forces gives the over-all annual needs of finished insect control liquids at one hundred million gallons, that is for military, lend-lease, and civilian needs. This is at least three-times total pre-war consumption. Manufacturers of naphthalene have been told that hundreds of tons of this material will be needed to make phthalic anhydride which in turn will be manufactured into dimethyl phthalate for insect repellents for the armed services.

That post-war demand for all types of insecticide materials will continue heavy, we feel quite certain. At the same time, we sincerely hope that such a belief is wholly correct because if it is not, there is going to be a tremendous tonnage of all sorts of insecticide raw materials fighting for a civilian market after the war. The output of insecticide materials has been increased to the point where a much expanded post-war demand *must be* developed,—or else! An industry committee to study this phase of post-war possibilities might not be amiss at this time.

# Replacements Materials for ROACH CONTROL

by Dr. George E. Gould

Purdue University

THE recent restrictions on sodium fluoride and pyrethrum powder caused by war conditions have presented an urgent problem to entomologists, for these two materials, either alone or in combination with each other, have given excellent results in the control of cockroaches, especially the German species. With sodium fluoride in short supply and pyrethrum virtually unobtainable for such uses, three solutions to the roach control problem are possible: first, the use of substitute chemicals which can replace sodium fluoride and pyrethrum temporarily during the present emergency; second, the use of replacement chemicals which will give as good results as the fluoride and pyrethrum; and third, the use of extenders and activators to make available supplies of sodium fluoride and pyrethrum go further. The present article reports investigations on all three phases of the problem.

Tests on roach control have been in progress since 1935, when experiments were conducted with dust materials on the American and Oriental roaches. In 1940 investigations on baits to control the German roach were begun, while studies on new or substitute materials were started in 1942. The technique used in this last series of tests was similar to that of Dewey with some changes, such as the use of a double-walled settling chamber and an exposure time of eight minutes for the dust to settle and the same period for roaches in the box with the dust. Roaches were

transferred from the box to half pint glass jars of the type in which mayonnaise is sold. A light ring of vaseline was placed inside the mouth of the jars to retain the roaches. German roaches for these tests were reared in the laboratory, newly-matured specimens being removed from stock cages daily and used 24 to 48 hours later. Records were made of dead roaches at frequent intervals during the first 12 hours of the test and three times daily thereafter up to 96 hours. For most materials 20 tests of five individuals or a total of 50 males and 50 females were used. The exceptions to this were those materials that showed little or no toxicity in the first tests and those with objectionable features, such as staining of hands, clothing and woodwork, irritation of the operator, and poor dusting properties.

## Substitute Materials

Sodium silicofluoride (or fluosilicate) has been used commercially in some instances as a substitute for sodium fluoride, but was found to be too coarse and heavy for an effective roach dust. Recently several new silicofluorides have been placed on the market with better physical properties for dusting. Five samples of silicofluoride (Table 1, samples D, E, F, G and H) and two of sodium fluoride (B and C) were purchased on the open market by a large insecticide company, who measured the particle size and forwarded them for testing. Other silicofluorides included in these tests were sample I from the DuPont Company in 1943; sample J, a new fluffy material from Henry Sundheimer, Inc. in 1943; and samples

K and L35 from Sundheimer in 1941. The sample L contained only 35 per cent sodium silicofluoride, while the others had 95 per cent or over.

For testing purposes the chemicals were each used pure and diluted with 50 and 75 per cent of pyrophyllite. The sodium fluorides had smaller particle size and in general dusted better than the silicofluorides. The silicofluorides varied greatly in particle size and fluffiness, with sample G, J, F, and D making excellent dusts. In table 1 only the mixtures containing 25 and 50 per cent of the chemicals are listed, as they present a better basis for comparison of the efficiency of the mixtures. When used undiluted, many of the chemicals gave a complete kill of the roaches. A comparison of the mortality of the roaches indicates that the sodium fluorides gave a better kill and in a quicker time than did the silicofluorides, although many of the fluffier silicofluorides gave excellent control of the German roach. Particle size of the sodium fluoride samples had little influence on the mortality obtained, while in general the sodium silicofluoride samples with the smaller particle size were better than those with the larger particle size.

Two related fluorine compounds, barium fluosilicate and cryolite, were tried in a previous test, where German roaches were allowed to run through the chemical on the bottom of a glass dish for four days. Barium fluosilicate gave a 50 per cent kill under these conditions, while cryolite killed no roaches in the four days of the test nor in the following 24 days in this dish.

\* Approved for publication as Journal Paper No. 113 by the Director of the Purdue University Agricultural Experiment Station.

TABLE 1.

The mortality and survival time of adult German roaches when treated in a dust settling chamber with samples of sodium fluoride and sodium silicofluoride of different particle sizes at dilutions of 50 and 25 per cent. In each series 50 males and 50 females were used.

Sample	Particle size in microns	Percent of chemical used*	Percent kill in 96 hours		Survival time in hours	
			Male	Female	Male	Female
Sodium fluoride						
A.	Unknown	50	100	100	5	15
A.	Unknown	25	100	86	9	35
B.	5-6	50	100	100	7	19
B.	5-6	25	100	96	16	29
C.	3-5	50	100	82	13	37
C.	3-5	25	88	48	30	43
Sodium silicofluoride						
D.	10-15	50	84	56	46	56
D.	10-15	25	68	32	50	45
E.	10-15	50	68	36	51	46
E.	10-15	25	58	24	57	56
F.	8	50	100	84	35	48
F.	8	25	100	82	38	60
G.	7-10	50	100	85	31	46
G.	7-10	25	96	66	42	53
H.	10	50	94	56	43	52
H.	10	25	46	22	50	64
I.	25	50	94	62	51	54
I.	25	25	82	34	51	67
J.	4-12	50	100	90	32	49
J.	4-12	25	98	66	42	56
K.	Unknown	50	95	90	33	54
K.	Unknown	25	96	86	41	58
L35.	Unknown	100	92	60	27	36

\* Diluent in all mixtures was pyrophyllite.

#### Tests with Borax and Boric Acid

The work of Walter (1918) on borax and boric acid has been largely overlooked, although many pest control operators have been adding borax to their mixtures for some time. A frequent mixture used in some cities to avoid legal restrictions on the use of sodium fluoride was 50 to 70 per cent borax and 30 to 50 per cent pyrethrum powder. Some commercial men even diluted sodium fluoride or the sodium fluoride-pyrethrum combination with as much as 50 per cent borax. More recently boric acid has been substituted for borax and more effective control has been reported. In 1935 to 1937 a series of tests were made with the American and Oriental roaches, where they ran through these chemicals on the floor of the cage for a period of seven days. The results with borax showed 37 and 30 per cent control of American and Oriental roaches respectively, and with boric acid a 77 per cent kill of both species.

In the dust settling chamber tests with German roaches, boric acid gave a 46 per cent kill of males and 58 per cent kill of females, while

the results over that of boric acid alone. Sodium fluoride at a 25 per cent dilution was better than mixtures containing either boric acid or borax plus 25 per cent sodium fluoride. However, boric acid used in mixtures with either sodium fluoride or with pyrethrum gave better results than did borax in the same mixtures. Both boric acid and borax were mixed with pyrethrum and lactose and compared with a similar mixture now being manufactured. But little difference could be noted among the three. All three mixtures retained their killing power after 15 and 30 days exposure to air. The paralytic action and the rapidity of the kill of these mixtures were more typical of pyrethrum than the other ingredients of the mixture. Bodies of roaches treated with boric acid usually became swollen on the second day and remained in that condition, even though the roaches did not die in the 96 hours of the test.

#### Tests with Organic Materials

A number of tests with pyrethrum, powdered rotenone-bearing roots and other materials derived from plant products have been conducted.

TABLE 2.

The mortality and survival time of adult German roaches when treated in a dust settling chamber with borax, boric acid and certain other inorganic chemicals. In most series of tests 50 males and 50 females were used.

Formulae of mixtures	Percent kill in 96 hours		Survival time in hours	
	Male	Female	Male	Female
1. Borax .....	10	7	87	90
2. Boric acid .....	46	58	57	65
3. Boric acid-sugar-pyrophyllite 80-10-10 ..	82	58	65	61
4. Boric acid-sugar-pyrophyllite 60-25-15 ..	92	70	51	64
5. Boric acid-sodium fluoride-pyrophyllite 50-25-25 .....	100	82	14	43
6. Boric acid-sodium fluoride-pyrophyllite 50-10-40 .....	63	47	39	48
7. Borax - sodium fluoride - pyrophyllite 50-25-25 .....	96	50	29	37
8. Borax - sodium fluoride - pyrophyllite 50-10-40 .....	32	28	66	73
9. Sod. fluoride-pyrophyllite 25-75 .....	100	96	16	30
10. Borax - Pyrocid - sulphur - tobacco - pyrophyllite* 55-3-10-10-22 .....	100	100	19	30
11. Borax - pyrethrum - lactose* 75-15 (0.135)-6 .....	100	66	19	45
12. No. 11 exposed 15 days .....	85	50	32	44
13. No. 11 exposed 30 days .....	60	20	48	88
14. Borax-pyrethrum-lactose 67-27 (0.135)-6 ..	100	100	15	31
15. No. 14 exposed 15 days .....	100	100	24	45
16. No. 14 exposed 30 days .....	100	50	29	50
17. Boric acid - pyrethrum - lactose 67-27 (0.135)-6 .....	100	100	14	26
18. No. 17 exposed 15 days .....	100	100	13	27
19. No. 17 exposed 30 days .....	100	100	29	36
20. Copper sulphate-pyrophyllite 50-50 .....	97	66	16	45
21. Barium carbonate .....	10	0	..	..

\* Commercial mixture.



TABLE 3.

The mortality and survival time of adult German roaches when treated in a dust settling chamber with pyrethrum, rotenone and other materials derived from plants.

Formulae of mixtures	Percent kill in 96 hours		Survival time in hours	
	Male	Female	Male	Female
1. Pyrethrum (0.5% pyrethrins) .....	100	100	15	22
2. Lethane-pyrethrum* .....	100	100	14	23
3. Pyrethrum-borax-lactose* 15 (0.35%)- 75-6 .....	100	70	19	45
4. Pyrethrum-borax-lactose 27 (0.135%)- 67-6 .....	100	100	15	31
5. Pyrethrum - boric acid - lactose 27 (0.135%)-67-6 .....	100	100	14	26
6. Pyrocid - borax - sulphur - tobacco dust-pyrophyllite 3-55-10-32 .....	100	100	19	30
7. Pyrethrum-sodium fluoride-pyrophyllite 20 (0.1%)-10-70 .....	100	100	5	10
8. Pyrethrum-sodium fluoride-pyrophyllite 5 (0.025%)-5-90 .....	100	90	10	20
9. Derris-pyrophyllite 20-80 (1% rotenone) .....	96	72	22	45
10. Derris-pyrophyllite 10-90 0.5% rote- none) .....	88	56	40	55
11. Dust impregnated with a rotenoid extract* .....	33	33	17	22
12. Piperine alkaloid-pyrophyllite 50-50..	88	68	21	37

\* Commercial mixture.

In the use of the dust settling chamber it was found that low dilutions of pyrethrum, such as a mixture with only 0.025 per cent pyrethrins, usually gave a good kill of German roaches. A 5 per cent strength of sodium fluoride gave a 50 per cent kill of males and a 37 per cent kill of females, while the addition of pyrethrum to this mixture to the extent of 0.025 per cent pyrethrins (Table 3, formula 8) increased the kill to 100 per cent of the males and 90 per cent of the females. A mixture containing pyrethrum (0.135 per cent pyrethrins), lactose and boric acid (formula 5) killed 100 per cent of both sexes in a shorter time than did a similar mixture (formula 4) in which borax was substituted for the boric acid. These two mixtures were exposed to the air for 15 and 30 days and still produced perfect kills, with the exception of the borax mixture at the end of 30 days, where the kill dropped to 50 per cent for the females. A commercial mixture containing 0.135 per cent pyrethrins, 75 per cent borax, 6 per cent lactose and 4 per cent miscellaneous ingredients (formula 3), was not as effective as either the borax or the boric acid mixtures (formulae 4 and 5). Another commercial mixture containing borax, a pyrethrum extract, sulfur, tobacco dust and a

carrier (formula 6), gave excellent results.

Mixtures containing cube and derris powders have been tested and were found inferior to pyrethrum mixtures. Results with cube powder were variable, but indicated a low toxicity to roaches. A derris mixture containing one per cent rotenone gave 96 and 72 per cent kill of males and females respectively, while a one-half per cent dust gave 88 and 56 per cent kills.

Piperine alkaloid, which is obtained from pepper and has been suggested as an activator for pyrethrum and rotenone-bearing roots, was tested at a 50 per cent dilution with pyrophyllite. Results show a kill of 88 per cent of the males and 68 per cent of the females in 21 and 37 hours respectively.

#### Tests with Organic Chemicals

A total of 45 organic chemicals have been tested at various dilutions on the German roach. Many of these chemicals were not suitable for dusting, but pulverizing and mixing with pyrophyllite usually improved their dusting properties. It was found in preliminary tests that many of the chemicals, such as 3,5-dinitro-o-cresol, caused severe staining of hands, clothing and woodwork and consequently

they were dropped from further consideration. Other materials, such as quinhedrone and acridine, were exceedingly irritating and could not be used as dusts.

Of the various materials tested, seven were considered to offer some promise and will be tested further under conditions of natural infestations. These chemicals, listed in order of their effectiveness, were 2,4-dinitroanisole, acetonesemicarbazone, azoxybenzene, a-nitronaphthalene, phenothioxin, hydrazobenzene and diphenylene oxide. The 2,4-dinitroanisole was outstanding in its results, as it killed 100 per cent of the males and 90 per cent of the females at a strength of 10 per cent. This chemical is light cream in color and has no noticeable odor. At present it is available at 65 cents a pound and the price could be reduced if it were manufactured in large quantities. The raw materials going into this chemical are readily available, but are subject to priorities.

The fourth-ranking chemical, a-nitronaphthalene, is available at 25 cents per pound, but might have an objectionable odor when used around a home or store building. Phenothioxin is also being manufactured and, if finely ground, might give excellent results against roaches. Its odor is pleasant, being suggestive of the odor of geraniums. Diphenylene oxide is also available and would possibly be more effective, if the particle size was smaller. Its odor is not strong and is suggestive of phenol. The other three chemicals are apparently not available now in commercial quantities.

In addition to the chemicals in table 4 a number of other organics were tested. These showed little or no toxicity when used in the dust settling chamber method. The chemicals and the kill with each when used at a 50 per cent dilution were as follows:

1. Acenaphthene, no kill of males or females.
2. p-Aminoacetanilide, 46% kill of males and no kill of females.
3. p-Aminoazobenzene, 40% kill of males and no kill of females.
4. p-Aminoazobenzene hydrochloride, no kill of males or females.
5. Carbazole, no kill of males and 10% kill of females.



TABLE 4.

The mortality and survival time of adult German roaches when treated in a dust settling chamber with certain organic chemicals.

Chemical	Percent of chemical used*	Percent kill in 96 hours		Survival time in hours	
		Male	Female	Male	Female
1. Acetone semicarbazone ....	50	100	100	15	22
2. Acetone semicarbazone ....	25	100	100	19	20
3. Acetone semicarbazone ....	10	38	44	41	62
4. Azoxybenzene .....	50	100	100	16	19
5. Azoxybenzene .....	25	92	82	31	44
6. Calcium chloracetate ....	67	80	76	22	28
7. Calcium chloracetate ....	25	36	16	44	45
8. Dimethyl acridan .....	50	40	35	65	38
9. 2,4-Dinitroanisole .....	50	100	100	16	23
10. 2,4-Dinitroanisole .....	25	100	92	16	29
11. 2,4-Dinitroanisole .....	10	100	90	18	36
12. 2,4-Dinitroanisole .....	5	92	67	36	43
13. m-Dinitrobenzene .....	50	80	50	42	36
14. 3,5-Dinitro-o-cresol .....	2½	100	100	2	3
15. 3,5-Dinitro-o-cresol .....	1	100	100	2	3
16. 3,5-Dinitro-o-cresol .....	½	53	33	11	45
17. 3,5-Dinitro-o-cresyl acetate	50	100	100	11	12
18. Dinitro-o-cyclohexylphenol.	8	40	13	19	42
19. 2,4-Dinitro-1-naphthol ....	50	33	60	60	67
20. 2,4-Dinitrophenol .....	8	100	100	2	2
21. 2,4-Dinitrophenol .....	1	100	68	5	28
22. Diphenylene oxide .....	50	86	82	27	26
23. Diphenylene oxide .....	25	84	34	31	27
24. Fluorene .....	50	56	32	44	42
25. Hydrazobenzene .....	50	82	70	39	52
26. α-Nitronaphthalene .....	50	90	78	41	45
27. Phenazine .....	100	76	38	55	65
28. Phenazine .....	50	32	12	51	59
29. Phenothiazine (micronized)	100	6	14	..	..
30. Phenothioxin .....	67	100	92	19	38
31. Phenothioxin .....	50	98	70	30	44
32. Phenothioxin .....	25	68	40	42	48
33. Quinhydrone .....	50	87	70	43	61
34. Xanthone .....	50	68	34	56	59

\* Diluent in all mixtures was pyrophyllite.

6. o-Chloroacetanilide, 10% kill of males and no kill of females.
7. p-Chloroacetanilide, no kill of males or females.
8. Chrysene, no kill of males or females.
9. 2,4-Dinitrotoluene, no kill of males or females.
10. Diphenylnitrosoamine, no kill of males and 8% kill of females.
11. 1,4-Diphenylsemicarbazide, no kill of males and 6% kill of females.
12. s-Diphenylthiourea, 20% kill of males and no kill of females.
13. Fluoranthene, 71% kill of males and no kill of females.
14. Hydrobenzamide, 3% kill of males and 20% kill of females.
15. Isatan, no kill of males or females.
16. Naphthalene, 4% kill of males and no kill of females.
17. Phenanthrene, 10% kill of males and 10% kill of females.
18. Phenol (10% strength), no kill of males or females.
19. Phenyl salicylate, 60% kill of males and 36% kill of females.
20. Pyrene, 66% kill of males and 5% kill of females.
21. Styrene dibromide, 10% kill of males and no kill of females.

When first mixed, phenyl salicylate at a 50 per cent strength gave 100 per cent kill of males and 94 per cent of females, but the kill dropped to 43 per cent for males and 7 per

cent for females in later tests. The chemical, s-diphenylthiourea, is the subject of two patents issued (Hand 1926, 1929) on its use against cockroaches and other insects, but showed little toxicity in the tests reported here.

## Tests with Extenders and Activators

Marcovitch and Stanley (1942) have published on a new mixture, which uses small quantities of pyrethrum and sodium fluoride and has dextrine as the activator and extender. A patent has been applied for on this mixture, which contains 10 per cent sodium fluoride, 10 per cent pyrethrum and 80 per cent of an acid type of dextrine. Starch has been used by some commercial operators to improve the sticking of the dust to surfaces as well as to roaches. It is used to replace about 20 per cent of the other diluent.

For these tests three samples of starch and four samples of an acid type of dextrine were supplied by National Starch Products, Inc. As a check on the efficiency of mixtures with these materials as diluents, a similar series was prepared in which pyrophyllite was used. A mixture of 5 per cent sodium fluoride with pyrophyllite gave a 65 per cent kill of males and 20 per cent kill of females, while 5 per cent pyrethrum (0.025 per cent pyrethrins) gave an 88 and 22 per cent kill respectively. When 5 per cent of each were mixed with pyrophyllite, the kill was 100 and 90 per cent of males and females. The starches and dextrines used with 5 per cent each of sodium fluoride and pyrethrum gave a good kill in most in-

(Turn to Page 111)

TABLE 5.

The mortality of adult German roaches when treated in a dust settling chamber with insecticide mixtures containing certain diluents.

Materials at right mixed with diluents below to make 100 percent.	Diphenylene oxide 25 Pyrophyllite 25		Dinitroanisole 5 Pyrophyllite 25		Sodium fluoride 25		Pyrethrum 5 (0.025) Sodium fluoride 5 Pyrophyllite 15	
	Percent kill Male	Percent kill Fem.	Percent kill Male	Percent kill Fem.	Percent kill Male	Percent kill Fem.	Percent kill Male	Percent kill Fem.
<b>Starch</b>								
No. 3F Special.....	78	52	40	9	98	78	100	74
No. 1M Crescent.....	90	80	78	52	95	86	100	80
Hoosier .....	38	14	69	18	100	86	100	100
<b>Dextrine</b>								
CW 990 .....	98	54	88	48	100	70	98	65
CW 1000 .....	74	32	92	54	96	76	96	82
M 4320 .....	96	80	74	44	96	90	100	82
M 4791 .....	88	32	87	44	100	86	100	92
<b>Pyrophyllite</b>								
Pyrax ABB .....	86	36	92	67	100	96	100	90

# *Drycleaning as a Means of* DELOUSING GARMENTS

*by J. L. Staubly and A. C. Lloyd*

*National Association of Dyers and Cleaners*

FUMIGATION methods for delousing of garments are effective, but require special apparatus and methods. Garments must be cleaned as well as deloused; therefore an ideal process would be a cleaning method which would delouse garments during the cleaning process, without necessitating the use of additional equipment or time consuming treatments.

Since some readers may not be familiar with the methods of drycleaning, a brief description of a typical commercial cleaning process is given here. The cleaning cycle consists of three operations: (1) washing by mechanical agitation in cleaning fluid; (2) extraction in a basket centrifuge; and (3) drying or deodorizing by tumbling.

The solvents commonly used for drycleaning are either petroleum distillates such as "Stoddard solvent," or chlorinated hydrocarbons such as carbon tetrachloride, perchlorethylene, and trichlorethylene. This paper deals only with drycleaning processes using Stoddard solvent. Stoddard solvent is a petroleum product similar in many properties to gasoline, but having a closed-cup flash point of 100° F. or over. Its distillation range in general falls between 300° and 410° F.

**Cleaning Operations.** The cleaning is carried out in three steps—(1) the break run, (2) the soap run, and (3) the rinse. The garments are washed in a horizontal cylinder-type washer equipped with reversing drive. During the break run the solvent is circulated through a pressure filter. After 10 minutes, the solvent circulation

is stopped and soap is added to the solvent in the washer. The wash wheel continues to rotate for 30 minutes with the soap dispersion. At the end of the soap run the circulation of the solvent through the filter is resumed to rinse the garments free of soap. The elimination of the break run is rapidly growing in popularity.

**Extraction.** The garments are extracted in a basket-type centrifuge to remove the greater part of the solvent before drying.

**Drying or Deodorizing.** A drying tumbler is employed for the removal of solvent remaining after extraction. This piece of equipment consists of a perforated cylindrical basket which rotates about a horizontal axis. During tumbling, heated air is blown through the revolving basket.

## Objectives of the Experiments

There are two factors in a drycleaning process which were thought to be worthy of consideration as disinsection methods. They are (1) the immersion in Stoddard solvent, and (2) the drying with heat. The project was planned with the purpose of evaluating each of these two steps as a means of disinsection.

The literature yielded no information as to the effect of Stoddard solvent on lice and eggs. Hutchison and Pierce (1) have shown that immersion in gasoline for a period of 54 hours killed only 81.3 per cent of the eggs, whereas they found that immersion for only 10 minutes in a 52° Baume mixture of gasoline and kerosene was fatal to 100 per cent of the eggs. Oth-

ers have tested the ovicidal value of kerosenes and have obtained conflicting results. Since no reference was found to the effect of the particular petroleum distillate designated as "Stoddard solvent," a determination of its insecticidal and ovicidal value was made in this laboratory.

Nuttall (2) has shown that dry heat of 142° F. is fatal to lice and eggs in exposures of 10 minutes or more. The temperature recommended by most manufacturers of tumblers for the tumbling of woollens is 160° F. as measured in the exhaust air. Tumbling is carried out for varying lengths of time, depending on the capacity of the tumbler and the load size. Since garments may contain as much as 15 per cent solvent by weight at the start of tumbling it is obvious that, although the air temperature is maintained at 160° F., the clothing will remain at a lower temperature as the evaporation of the solvent has a cooling effect.

Hutchison and Pierce (1) reported data obtained on the ability of tumbling in drycleaning cycles to destroy lice and eggs. At the time this work was carried out gasoline was the solvent in use for drycleaning. Although gasoline has a lower flash point and lower initial boiling point than has Stoddard solvent, it has a higher distillation end point. The low boiling fractions of gasoline were readily removed from garments, but the high boiling fractions required considerable heat and tumbling time. Hutchison and Pierce tumbled the garments for 25 minutes. During the first 10 minutes the temperature rose from 135°

TABLE I. Effects on Lice Eggs of Tumbling and of Immersion in Stoddard Solvent

Test No.	Age at testing (days)	Treatment to which eggs were exposed	No. of eggs	No. of eggs hatched	% hatched
A <sub>c</sub>	3	Control—no treatment	175	102	58
A <sub>1</sub>	3	15 min. immersion in new Stoddard solvent, dried in air at room temperature.	62	37	59
A <sub>2</sub>	3	15 min. immersion in new Stoddard solvent, dried in tumbler for 30 min. Temperatures attained shown in Table I-A.	>50	0	0
A <sub>3</sub>	3	15 min. soap run. 15 min. rinse on filter, dried in air at room temperature.	80	35	44
A <sub>4</sub>	3	Tumbled 10 min at 150°F. with a dry load.	>50	0	0
A <sub>5</sub>	3	Tumbled 20 min. at 150°F. with a dry load.	>50	0	0

to 160° F.; during the remaining 15 minutes the temperature ranged from 160° to 182° F. In present practice, using the more easily removed Stoddard solvent, it is recommended that the temperature as measured in the exhaust stack should not exceed 160° F. during tumbling. For this reason it was considered advisable to carry on tests on tumbling as it is practiced at the present time.

Pierce, et al (3) showed that laundering procedures utilizing water heated to 131° F. and subsequent tumbling with heat were effective, but laundering of woollens at this temperature would be hazardous even with the greatest of care. In a drycleaning process the lack of appreciable amounts of moisture in clothing during tumbling minimizes the dangers of shrinkage or felting.

#### Experimental Procedures

Preliminary tests were made on a quantity of lice eggs to determine the effects both of heat and of immersion in Stoddard solvent. The treatments received by the eggs and the results obtained are presented in Tables I and I-A. The eggs used in these tests were all of the same age, and inasmuch as the resistance of lice eggs to such treatments may vary with their ages, it was considered necessary to include tests on eggs and lice in all stages of their development.

A colony of lice was raised in our laboratory to furnish the material

for the proposed research. The lice were raised in an incubator at 87° F. and were removed twice a day for feeding. The insects were kept on

TABLE I-A—Temperature of exhaust air during tumbling of Sample A<sub>2</sub> (Table I)

Time of tumbling (min.)	Temperature °F.	Time of tumbling (min.)	Temperature °F.
0	125	14	156
2	133	16	159
4	139	18	160
6	144	20	160
8	146	25	160
10	148	30	160
12	153		

small squares of blue serge cloth upon which the eggs were laid. Each morning the lice were transferred to fresh cloths, thereby keeping each day's lay

of eggs separate. The eggs were collected in this manner until the oldest eggs began to hatch, thus every stage in the incubation of the eggs was represented.

During the treatments the small squares of cloth on which the eggs were laid were enclosed in small cloth bags to prevent the eggs from being brushed off and lost. These cloth bags were then pinned to the inside of a pair of trousers.

The solvent used was one which met all the requirements as set forth in "Commercial Standard CS3-40" for Stoddard solvent. All the tumbling tests were carried out in a tumbler having an 18 in. x 30 in. cylinder. A thermometer was inserted into the exhaust stack to permit the determination of air temperature at various intervals during the tumbling operations. The various treatments and their effects on the eggs are found in Tables II and II-A.

#### Discussion of Results

The preliminary tests (Table I) show that mere immersion in Stoddard solvent is not a reliable method for killing lice eggs, although other tests (Table II, Test No. 1h) prove this solvent to be very effective against adult lice.

The fact that Stoddard solvent killed the lice but not the eggs led to the concentration of later work on tumbling tests. Control lots of eggs of all ages receiving no treatment yielded an average hatch of 94 per cent. Exposure of eggs from the same batches

TABLE II-A—Temperature of Exhaust Air During Treatments Given in Table II. Load 1 (15 lb.)

Time (min.)	Temperature °F.	Treatment	Time (min.)	Temperature °F.	Treatment
0	107		0	92	
2	120		2	112	
4	130		4	129	
6	139		6	138	
8	144		8	144	
10	149		10	150	
12	154		12	156	
14	158		14	160	
16	160		16	160	
18	160		18	160	
20	160		20	160	
22	160		22	160	
24	160		24	160	
26	160		26	160	
			28	160	
			30	160	

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# Standardization of INSECTICIDE PACKAGES

By *W. E. Braithwaite*

*National Bureau of Standards*

IN adjusting itself to the uncompromising economy of total war, American industry has undergone many changes in the past few months. It has still to undergo many more changes. When the Chairman of the War Production Board said curtailment and limitation orders being issued would "change the face of American Industry," he was not making a prophecy; he was stating a cold fact, and that fact is rapidly nearing accomplishment. Many of the Limitation Orders issued in the past few months have now reached the cut-off date and hundreds of familiar products either have disappeared or will soon disappear from the market, or be greatly curtailed.

We long since have given up the idea that war production could be parallel to peacetime production—that we could have both. We know now that there is room only for war production with a minimum production of civilian goods. Hardly any industry, no matter how remote it may seem from war, remains unaffected. I am sure that your industry is not immune in this respect.

Because our chief source of tin has been cut off, very much smaller quantities of food are being packed in metal cans. However, food is being processed and packed—but in other forms and in other kinds of containers. This kind of adaptation has been necessary in almost every industry supplying its normal product to meet either war or civilian needs, or both.

A good example of what has been accomplished in the way of conservation through substitution, is that

\* Before Nat'l Assn. Insecticide & Disinfectant Mfrs., Cleveland, June 7.

of paperboard boxes for other types of containers, resulting in savings, in 1942, of 215,000,000 lbs. of critical metals; 8,000,000 board ft. of lumber; 750,000 lbs. of glass; 220,000 lbs. of cellophane; 36,000 lbs. of plio-film; 12,000 lbs. of rubber. These savings have been reported by the association representing the manufacturers of folding boxes.

Mr. Nelson has recently stated that "an intelligent application of the principles of simplification and standardization can be of great value to the war effort." As a matter of fact, simplification and standardization have already made a very substantial contribution to the war effort and much has been accomplished on a voluntary, co-operative basis by industry action as well as through mandatory orders.

To assist in a wide program to increase efficiency in production and to conserve materials, the U. S. Department of Commerce, through the National Bureau of Standards, is cooperating with the War Production Board and other agencies of the Government, as well as manufacturers, distributors, users and other interested groups, in an effort to eliminate excessive or unnecessary types of manufactured products through the expedients of simplification and standardization. This program is in continuation of the work that has been carried on by the Division of Simplified Practice of the National Bureau of Standards, since World War No. 1.

Simplification served a very useful purpose in that earlier National Emergency and it has been successfully applied by industry, the public and Governmental agencies during in-

tervening years as is witnessed by the fact that nearly 200 effective peacetime Simplified Practice Recommendations are in existence today—one of these being Simplified Practice Recommendation R41-42 covering standard packaging and containers for Agricultural Insecticides and Fungicides.

Our Division was brought into the picture a few months ago when it was indicated to us that we might be called upon to assist your industry in connection with the development and promulgation of a Simplified Practice Recommendation covering recommended standard packages and containers for household insecticides, disinfectants and allied sanitary products. About a year ago a committee or panel was appointed by the Chief of the Insecticides and Fungicides Section of the Agricultural Chemicals Unit of WPB, to undertake a study of the possibilities of standardizing containers for use in the packaging of household and industrial insecticides. The committee or panel has drafted what appears to me to be an excellent package simplification program. As I understand it, this proposed package and container simplification program has been discussed by the WPB Industry Advisory Committee.

With the approval of your association our Division will circularize the manufacturers, distributors, users, and others interested, for voluntary acceptance of the proposed simplified practice recommendation covering standard types and sizes of glass containers for household and industrial insecticides and disinfectants. The draft of this proposed simplified practice recommendation reads as follows:

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TABLE 1.—RETAIL PACKAGES

Size of package	Standard Container in WPB Limitation Order L-103 for Glass	Overflow Capacity (fluid ozs.)	Max. wt. of glass (Avoir. ozs.)	Height (Inches)	Max. Outside Diam. of Body (In.)	G.C.A. * Finish No.	Number of Packages in Shipping Case
1 Pint	<sup>1</sup> N.M. Round, Exhibit 5, Schedule E						
1 Quart	<sup>1</sup> N.M. Round, Exhibit 6, Schedule E				41		
1 Gallon	Glass Jug, Drawing 13 Exhibit No. 51-98	136	48		6 — 64	38-400	

Note: <sup>1</sup>N.M. means narrow-mouth bottle. \* G.C.A. means Glass Container Association.

### Proposed Simplified Practice Recommendation for Household Insecticide Container and Package Sizes

In line with defense plans to simplify production in order to increase output and to assist in the program to assure equitable distribution of glass containers for essential uses, the manufacturers of household insecticides have submitted to the Division of Simplified Practice of the National Bureau of Standards (through a committee of the industry, Mr. W. J. Zick, Chairman), the following proposed simplified schedule of recommended standard sizes of containers and packages for household insecticides:

#### History of Project

THE following facts, comments and suggestions were submitted by a committee of the industry to indicate the need for package and container simplification as well as a justification for the promulgation of the proposed Simplified Practice Recommendation.

"At present household insecticides are being marketed in the following retail sizes: 4, 6, 8, 10, 12, 16, 32, 64 and 128 fluid ounce containers, a total of nine sizes.

"From this it would appear that the elimination of some sizes is in order for the following reasons.

"1st. Reduction in the number of sizes will tend to simplify and reduce wholesale and retail inventories.

"2nd. Certain small sizes are uneconomic from the standpoint of the manufacturer because they are unprofitable to produce.

"3rd. Small sizes cost the consumer more per ounce than larger size packages of the same brand.

"4th. It takes more container material, i.e., glass, more caps (metal), more shipping containers (paper), more transportation (shipping weight and space) to market a gallon of insecticide in 6, 8, 10 or 12 oz. bottles than it would to market the same quantity in pint bottles.

"It is appreciated that the elimination of certain sizes may on first

thought appear to work a hardship on certain manufacturers. However, our first job is to win the war. Steel is a critical material and every ton that can be saved from civilian use will help.

"Transportation is also most important to the war effort. Eliminating some of the smaller sizes of household insecticide on the market means less weight and space to transport every gallon of insecticide sold, a release of transportation facilities for war needs.

"The glass bottle manufacturers should be contacted and arrangements made to allow not more than a certain amount of glass per bottle depending on size, as certain types of heavy glass bottles are not necessary to get household insecticides to market.

"Every saving that can be made in material if carried through in all industries will mean savings in manpower also, making additional labor available for direct war work. On a normal production line it takes as much labor to fill a 6, 8, or 12 oz. bottle as it does for a pint bottle.

"According to information secured from a reliable source there will be a saving of approximately 19 per cent of the glass now used in the six-ounce standard round bottle of insecticide by marketing in standard round pint bottles instead of in the 6-ounce size.

"The saving in metal caps by marketing in pints instead of in 6 oz. bottles would be approximately 54 per cent of the weight of caps now used on the six-ounce size.

"Soda ash is a critical material and by saving approximately 19 per cent of the glass now used in the six-ounce size as stated above, soda ash to the extent of 25-30 per cent of the weight of the glass saved would also be conserved.

"The saving in corrugated shipping cases would amount to 36 per cent of the weight of corrugated cases now used to ship the 6 oz. size.

"In transportation, a saving of 28 per cent in shipping weight and 35 per cent in shipping space would result

if the six-ounce size were eliminated and an equal volume of insecticide were marketed in the pint sizes instead.

"Special molds for insecticide bottles should be discouraged as it is more important that the industry have sufficient quantities of a limited number of sizes of bottles rather than limited quantities of specially designed bottles.

"In view of the emergency and the economies which the foregoing proposal will effect, it is recommended that for the duration household insecticides be marketed in Pints and Quarts in glass only and possibly Gallons in glass, and 5 and 55 gallons in suitable containers.

"Rather than have changes made every few months in the number of sizes the industry can market, it would be our suggestion that we agree on the above mentioned sizes for the 1943 season and if any revision is necessary it be made a year from now for the 1944 season."

Simplification and standardization of manufactured products (including containers and packages) will increase the total volume of goods for civilians—make a given quantity of materials go further—stretch available materials to make a larger number of essential units, and make possible a more efficient use of machinery and manpower.

A simplification program is therefore a challenge to both Government and industry in the emergency which confronts the United States of America at the present time. The National Bureau of Standards, through our Division of Simplified Practice, will be pleased to assist your industry to meet the challenge in carrying forward your packaging simplification program as a vital defense activity and as a valuable contribution to post-emergency economy.

As fly poison a mixture of monohalophthalene and formaldehyde is used. The preparation may be a powder, vapor or gas. Deutsche Solvay Werke A.-G. German Patent No. 708,509.

TABLE 2.—LARGE PACKAGES

Size of Packages	Type of Container
5 Gallons	Glass carboy or other available and suitable container.
55 Gallons	Any available and suitable container.



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# DISINFECTANTS

## for the Armed Forces

by  
**Dr. G. F. Reddish\***

Lambert Pharmacal Co.

**A**SIDE from actual fighting equipment and food, one of the most important items used by the military services is germicides. These include both antiseptics and disinfectants of a wide variety.

We have become so accustomed to the benefits derived from the general use of germicides that we often forget how important they are in the preservation of health. In order to realize the importance of antiseptics and disinfectants, it is only necessary to visualize what the conditions would be if we were deprived of the use of these valuable germ-killing agents. The present favorable state of public health and personal well-being in civilized countries is due very largely to our knowledge of and use of germicides.

The excellent health record of our armed forces today is also largely due to the use of germicides. The importance of disinfectants to the military services is so well established that it is almost taken for granted. Even so, an open discussion of this subject will be helpful in understanding fully the uses of disinfectants by the military and may indicate ways in which our industry can be of further assistance.

The present symposium is intended for this purpose. Certain of our members will be asked to discuss the various disinfectants now being used by the army, navy, etc. and suggest such additional uses as may be desirable.

By way of opening this general discussion I would like to outline briefly the present use of disinfectants for the purification of drinking water.

One of the most important single public health measures for the prevention of the spread of disease is the purification of drinking water. This is accomplished principally by the systematic use of suitable disinfectants, especially chlorine and chlorine compounds. Although this has become so commonplace that we now take it for granted, public health authorities are continually vigilant in protecting our water supplies.

The armed forces are by necessity large users of disinfectants for purification of water. This most important means of protecting the health of our military forces is a matter of much concern to the Sanitary Corps and others who spend much time and effort in this field.

Chlorine and chlorine compounds have proved especially satisfactory for the decontamination of drinking water. It may be of interest in this connection to review the qualifications of a satisfactory chlorine disinfectant for use by the military services for the purification of water. I will limit myself to the disinfection of small quantities of water by the individual soldier in the field. Each soldier carries a canteen and when on active duty finds it necessary to obtain water for drinking wherever he may be. Under these conditions he must disinfect the water himself by adding the chlorine compound to the water in his canteen.

Just what kind of chlorine compound would be most suitable for this purpose? The following have been and are being used: calcium hypochlorite, sodium hypochlorite, Chloramine-T, chloramine-B, Halazone and others. Since there are no established criteria which cover the ideal disinfectant for water purification,

it might be well for us to give consideration to this matter. We might consider briefly certain specifications which such an ideal compound should meet in order to be regarded as completely satisfactory, for this purpose.

First of all, the chlorine compound must *kill all* of the pathogenic bacteria that may be present in the water treated. It must of course be effective in waters of all kinds of high acidity and high alkalinity, waters high in organic matter, etc. As a margin of safety it should also kill exaggerated numbers of such disease-producing bacteria as may be present in all kinds of water, such as the typhoid bacillus, the dysentery bacillus, dysentery amoeba, etc. As a further precaution, the disinfectant must kill these very large numbers of pathogenic bacteria in water of extremes of temperature, from just above freezing (36° F.), to very warm water (120° F.).

This germicidal activity must be exerted *quickly*. Complete killing of all the disease-producing bacteria should be accomplished within 10 minutes at all temperatures (from 36° F. to 120° F.). This is desirable even though the usual directions specify that 30 minutes be allowed before the treated water is used.

The treated water must be *clear* and have no unsightly deposit or sediment. Since it is possible to do so the soldiers should be supplied with disinfectants which do not make the water unattractive.

The treated water must have a *pleasant* taste; that is, be free from

\* Before Nat'l. Assn. Insecticide & Disinfectant Mfrs., Cleveland, June 8.



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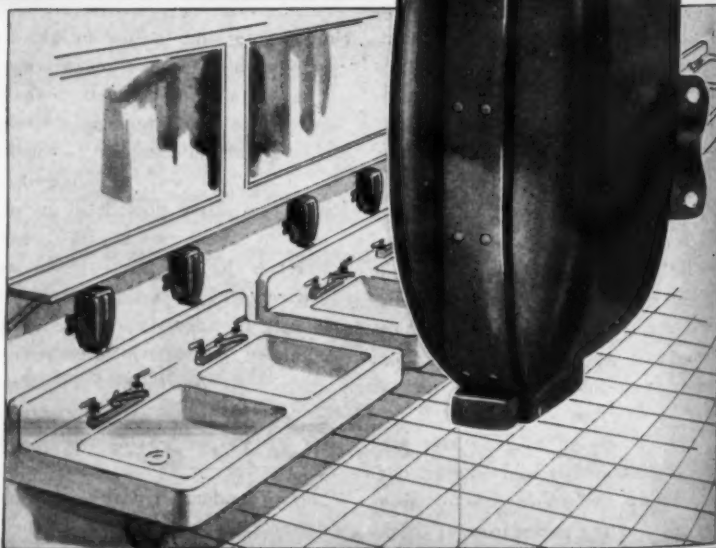
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objectionable odor and taste of chlorine. It should not be necessary to add a dechlorinating agent to assure a pleasant taste to the water. Since it is possible to supply the soldier with disinfectants that will not change the taste of the water, this should be done.

The chlorine compound itself must be *stable* under all conditions of storage without the necessity of special precautions and special containers. This stability must be maintained at high and low temperatures and humidities for one year or more.

It is also especially desirable that the compound be made in *tablet* form for the following reasons:

The tablet form is *convenient* to use and is far more practical than powder or liquid, requiring less space for storage, less difficulty in handling, etc.

The *packaging* of the tablet form is not only more convenient, but large quantities can be packaged in small containers, requiring a minimum of space in the soldier's kit.

The tablet form is also *cheaper* since no special packaging precautions are necessary.

The tablet form is also more *accurate* since the exact dosage can be accurately administered without the necessity of measuring devices and adjustments. This is especially important for use by individual soldiers treating water in canteens. It is necessary only that the soldier add 1 or 2 tablets to a canteenful of water. This is simple, quick and accurate.

The product must be *safe* to use in drinking water and be non-toxic even when the treated water is consumed in large quantities.

The product must also be *available* in large quantities.

Summarized briefly the ideal disinfectant for use in water purification by the armed forces, must be:

1. *Germicidal* against all disease-producing bacteria carried by water.
2. Kill all these bacteria *quickly*.
3. The treated water must be *clear*.

4. The treated water must have a *pleasant* taste.
5. The product must be *stable*.
6. The product should be in *tablet* form.
7. Use of the product must be *convenient*.
8. The form of the product must be such so large quantities can be *packaged* in small containers.

9. It must be *cheap*.
10. The form of the product must be such that the dosage can be applied *accurately* by the soldiers.
11. The product must be *safe* to use.
12. The product must be *available* in large quantities.

## SYNTHETIC PHENOL DISINFECTANTS

*by Jack Varley*

*Baird & McGuire Inc.*

BECAUSE of the War, synthetic phenol germicides have crashed through to the front in short order. I don't believe there is doubt in anyone's mind as to the efficiency and suitability of these recently developed products for general disinfection purposes but if it hadn't been for the present emergency arising, it would probably have been many years before these products gained a firm foothold with the users of disinfectants.

During the last war large quantities of cresol compound and cresylic compound were used and at the outbreak of this present war the same type of germicides were in heavy demand by both the Army and Navy. During World War I, however, very few people had heard of, or were interested in, the field of plastics. Today the reverse is true. With no demand for plastic materials in World War days, there was a sufficient amount of cresol and cresylic acids (by using the combined production of the United States and Great Britain) to take care of the Army and Navy germicide requirements at that time.

Just before the start of the current war the plastic industry became one of the largest users, if not the largest consumer, of cresol and cresylic acids. As a result less and

less of these materials were available for disinfectants. It is admitted that sanitation in camps and in the field is extremely important, because as all of you know, more men died in the last war from disease than died from bullet wounds. For the first few months, however, sanitation had to play second fiddle to arms production.

At the start of this war the Army and Navy both required very large quantities of disinfectant made from cresol and cresylic acids. Deliveries could not be made, simply because there was not enough material available to take care of both the plastic industry and the disinfectant industry. Bombers and other equipment used for combat were decidedly more important, especially at that time, than germicides. As a result, manufacturers of disinfectants had to turn elsewhere for raw materials. It must be kept in mind that whatever material was chosen had to be available in large quantities and not be critically needed elsewhere.

Several manufacturers had been experimenting for years with the synthetic phenols (For brevity I am classing all of the various chlorinated, benzolated, etc., phenolic materials as "synthetic phenols") Fortunately



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the Armed Forces were able to turn to these newly developed germicides and in that way release all of the cresol and cresylic acid for plastic production.

The disinfectant requirements of the Army and Navy during the period from our entrance into the war up until the present time have been very large. It has been fortunate that the synthetic phenols are very potent from a germicidal viewpoint because it requires only small percentages of phenol in the germicide to produce a compound with relatively high germicidal efficiency. I am referring in this instance to a comparison, germicidally speaking, between Cresol Compound U.S.P. and synthetic phenol germicide as per Army specifications.

Up until the present time the Army specifications for synthetic phenol germicides called for a product having a phenol coefficient of 5 against both *Staphylococcus aureus* and *E. typhi* — in other words, more than twice as potent, germicidally speaking, as U.S.P. Cresol Compound.

Newly released Army specifications as well as current Navy specifications call for a concentrated germicide with a phenol coefficient of approximately 17 against *Staphylococcus aureus* and 11 against *E. typhi*. By concentrating the material, containers, shipping space and money are saved. The concentrated material is, of course, diluted to a much greater extent before using than the product formerly purchased by the Army.

The formulation of these synthetic phenol germicides is somewhat more complicated than that of other standard commercial products. For one thing, slight variations in compounding are reflected in rather large discrepancies in the phenol coefficient value of the finished product. I say "phenol coefficient value" rather than "germicidal value" because there seems to be quite a variation in phenol coefficient values in the testing of some of these germicides. Dr. Brewer brought out at a recent American Public Health Meeting that non-uniformity in the peptone used in making broth is causing quite a wide

difference in test results. It would appear there is going to be a shortage of specially prepared beef extract in the near future and this may cause further complications. I just mention these points because it shows there is still quite a bit of work to be done towards perfecting the formulation, or compounding, of these synthetic phenol germicides. On the other hand, perhaps adjustments in the F.D.A. Phenol Coefficient method will have to be made so that true evaluations may be determined.

I hasten to add, however, that even in their present stage they offer many advantages over the more recently used commercial disinfectants.

These new synthetic phenol germicides are enjoying widespread distribution because of their use by the Army. They are being used in field hospitals, base hospitals, for emergency purposes and for general sanitation. It, therefore, follows that all of the surgeons, doctors, internes

and nurses will become familiar with the use and particular merits of this type of germicide.

There is little doubt in my mind that at the close of the war these men and women in the medical profession will continue using synthetic phenol germicides which, from reports to date, are meeting with an exceptionally favorable response. Although the Sulfa drugs have gained the spotlight as the exceptional "life savers" of this World War, I do know that the use of germicide as a preventative measure against disease and infection has played a major part in holding down the death rate. Both the Army and Navy are well aware of this fact or neither would be purchasing germicides in such huge quantities. It is really a pleasure to see that both of these branches, in fact all branches of the Armed Forces, believe in the old but often unheeded proverb "An ounce of prevention is worth a pound of cure."

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by W. A. Hadfield

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For chlorinating water supplies, a 1 per cent available chlorine stock solution of the hypochlorite is first prepared and this added direct to the water by means of portable hypochlorinators. In disinfecting swimming

pool waters, the hypochlorite stock solution is either added direct to the water or circulating system by means of a hypochlorinator. For foot baths, a concentration of 5,000 parts per million of available chlorine is generally considered as the correct concentration and this solution is prepared either by adding the hypochlorite direct to the water or by diluting the stock solution.

For overseas use, high test calcium hypochlorites are packaged in five-pound terne plate containers. Grade C bleaching powder is packed in special coated steel drums of 20 pounds capacity. These have lug covers and tests have shown that this package is completely water tight. For domestic military use Grade C bleaching powder is packaged in fibre body metal top and bottom containers.★★

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# Sodium Fluoride Crayons for ROACH CONTROL

SODIUM FLUORIDE (NaF) and mixtures of NaF and pyrethrum powder are commonly used by the housekeeper and pest control operator for the control of the German cockroach, *Blattella germanica* (L.). The powder is sprinkled crudely or distributed by means of rubber bulb applicators or powder dusters in or about the hiding places of the insects. Although thorough dusting of NaF usually results in satisfactory control, its use in this way is often objectionable, particularly in places most frequented by the German roach; viz., kitchens and restaurants, where it may contaminate food or utensils.

It occurred to H. E. Jennings of the *Smithereen Co.* that the efficiency of NaF application might be increased and the hazards reduced by making sticks or crayons of NaF, like sticks of chalk, by means of which "deadlines" could be laid down in the proper places. The present paper deals with the development and practical trials of a product<sup>2</sup> based on this idea.

## Crayon Application

An ideal line left by a stick of sodium fluoride would kill every roach that crossed it once. In preliminary tests adult male German roaches were caused to run across a plate covered with a uniform deposit of NaF laid down in a dust tower. Observations indicated that contact with the powder was made only by the tarsi, which left well-defined foot prints of the roach in the dust. Shortly after crossing the

dusted surface, the roach hurriedly cleaned the tarsi with its mouth parts. Shafer (1915), Hockenyos (1933), and Munger & Siegler (1937) have shown that NaF acts both as a contact and stomach insecticide against roaches. However, in the present experiments the test insects could not have been killed by contact action of the minute quantity of NaF remaining on the tarsi after they had been cleaned. Therefore, the present lethal effect of NaF is attributed to its action in the alimentary tract.

If the tarsi of a roach picked up more than 0.3 mg. of NaF in crossing a deposit of powder, it was almost certain to die, whereas quantities less than 0.1 mg. were seldom fatal. Further, increasing the depth or width of the deposit resulted in an increase in the mortality. Oil was added to the powder in an attempt to increase the quantity adhering to the tarsi. Of a series of oiled dusts containing from 1 per cent to 10 per cent by weight of number 30 S.A.E. motor oil, 6 per cent oiled dust was shown to be the most effective. In comparison with un-oiled NaF, a deposit 6.4 cm. wide of 6 per cent oiled dust required approximately half the quantity of powder for the same degree of effectiveness when crossed only once by the roaches. However, even the quantity of oiled dusts needed to introduce a satisfactory kill with one crossing of a dusted surface was in excess of that which could be left by a chalk mark of practical width; e.g., 3.7 cm.

The failure of a narrow band of NaF dust to kill every roach that crossed it once did not exclude stick application as a practical control measure, if the roaches were likely to cross the thin deposit several times. Small

by John M. Hutzel\*

Ohio State University<sup>1</sup>

quantities of moist NaF pounded into crayons in a metal tube and then dried were used to mark lines across the bottom of cockroach rearing drawers containing from 60 to 100 unselected roaches. Food and water were placed on one side of a single line drawn in each drawer and corrugated cardboard strips, serving as shelters, on the other side. A line drawn directly on the unvarnished rough bottom left a heavy deposit and in most cases more than 95 per cent of the roaches died within 24 hours after the application. A much lighter line drawn on a strip of cellulose acetate (celluloid) tacked across the bottom was less effective, although it was tracked up quickly and completely. Although dust deposits of 6 per cent oiled dust laid down by means of a dust tower were more effective than un-oiled dusts, the latter worked more efficiently in crayons because the oil interfered with the deposition of the powder.

## Making Crayons

Using a brass tube three-fourths inch in diameter as a mold, wet commercial NaF was pressed into sticks or rods. From 100 grams of NaF about six 2.25-inch crayons were made. While drying, the surface became hard, but the core remained soft and readily left a deposit like a chalk mark on all but polished surfaces. In the tests reported here, two coats of transparent lacquer were applied to each crayon to strengthen it. Later, the lacquer treatment was discontinued and structural

<sup>1</sup> Contribution of the Ohio State University Research Foundation in cooperation with the Smithereen Co., Chicago. Project supervised by Professor F. L. Campbell.

<sup>2</sup> Patent pending; assigned to H. E. Jennings. It is not on the market at present.

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strength was increased by heating the crayon immediately after it was formed in a hydraulic press.

### Practical Applications

Preliminary treatments of an artificially infested room indicated that crayon applications would be safe and effective. A heavily infested restaurant kitchen, a grocery store, and an apartment were then selected for practical tests of the effectiveness of this method in controlling the German roach.

In the restaurant a solid line of NaF was drawn on the floor next to the walls, entirely around the kitchen. By rubbing the crayon back and forth along the wall the powder was made to sift down behind radiators, into cracks in the molding, into wash basins, and into places otherwise inaccessible. The sifting powder tended to cling close to the wall as it fell. The corners beneath table tops were marked as well as the top inner borders of shelves used for storing foods. The plumbing fixtures beneath basins and wash tubs were heavily marked. No attempt was made to clean up piles of long-accumulated filth beneath tables, lockers and stoves. Instead, lines were drawn bordering such dirty places. In no case were applications made directly over open foodstuffs or utensils. Eight crayons were used in two hours.

The grocery store treated possessed a far heavier infestation than the restaurant kitchen. Empty egg capsules, cast skins, and cockroach droppings were to be found in almost every corner and under every box or movable object examined. The grocers reported that roaches were seldom noticed in the front part of the store, and for this reason applications were confined to the rear sections. A single heavy line was drawn on the floor about the base of each show case and counter. All corners of a wooden support for a false wall back of the meat counter were treated. Powder was sifted behind the refrigerator as previously described, and into cracks where the molding had separated from the wall. Lines were drawn around the openings that led to the basement, around water fixtures of all sorts, behind shelves, along the ceiling molding, in the bottom of show

cases, and in other places where there was evidence that the roaches had been active. Twelve crayons were used in two hours.

The apartment treated was located above the infested grocery. Applications were made in the late evening in the kitchen and bathroom. The entire base of the molding was marked as well as the floor along the molding. A single line was drawn surrounding each register. Marks were made along the edges of the cupboard and along the cracks where the window frames joined the wall. On the upper inside borders of each cupboard shelf a single heavy line was drawn, and the corners beneath each shelf were thoroughly marked. Less than four crayons were required for the treatment.

In the basement of the grocery many roaches of all stages were found swarming over a cement wall in the vicinity of a drain, which was evidently their water supply. Four horizontal lines were drawn at different levels across the wall for the entire length of the roach-covered area. Two vertical lines were then drawn connecting the ends of the horizontal lines. During the application much of the powder sifted down the sides and formed a heavy deposit of dust at the junction of the floor and wall.

### Results

The writer's observations are supplemented with comments by cook, grocer, tenant, and landlord.

A number of dead adult roaches, including females bearing egg capsules, were found about the floor on the restaurant kitchen 24 hours after the application. Beneath the chalked inside corners of table tops dead nymphs were found in groups of 4 to 9. Roaches had disappeared from the corners and cracks that had been crowded with them before the treatment. A number of live roaches were found in piles of dirt, but they moved slowly.

The following day the cook said that the infestation had become worse since the application was made, and complained that the roaches were continually falling off the ceiling. Two weeks later she seemed favorably impressed with the results, because she had

not found it necessary to spray since the second day following the application, whereas she had previously sprayed every other night.

Ten hours after the grocery store was treated, a few dead roaches were found on the floor in the front of the building where live roaches had seldom been noticed by the store attendants. The following day the number dead had greatly increased, one clerk having counted 25 upturned roaches behind a single counter. Living roaches were not found in any of the corners marked with NaF.

Ten days after the application all the original marks were still present, as the storekeeper had been careful not to sweep the lines away. A few live roaches were then found by carefully searching behind shelves of canned foods, but the treatment continued to function; each morning a number of dead roaches were swept up. The live roaches were thought to have come from the kitchen of an untreated adjoining shop in which the landlord lived. He reported that shortly after the application next door his kitchen was overrun with roaches, but that they moved slowly and were easily killed. Later he noticed fewer roaches than before the neighboring treatment.

During the first two nights after treatment of the upstairs apartment, the tenant also complained that roaches had dropped about her from the ceiling of the kitchen. The night following the application, 18 dead roaches were taken from one cupboard. Three days later the tenant reported that roaches were on their backs all over her kitchen. On the second evening after the treatment, the writer saw a few live roaches crawling about on the walls. An inspection of the original marked hiding places did not reveal the presence of a single roach.

At the base of the wall surface treated in the cellar, more than 200 dead roaches, in all stages, were found 24 hours after application. No live roaches were to be seen throughout the treated area.

### Discussion

Application of NaF by the use of crayons increases its efficiency and safety for the control of German



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roaches. Lines may be easily drawn on surfaces, such as walls and ceilings, which are difficult or impossible to treat satisfactorily by prevailing methods. When carefully applied, there is no danger that dust from a stick will settle upon food or utensils. Except for the insects hiding in cracks into which the powder sifts, the roaches do not as a rule become covered with the dust. This lessens the danger of contaminating food or utensils over which the roaches may run after coming into contact with the poison.

If the marks are not disturbed, they will function for an indefinite period of time and offer protection against reinfestation. The marks made along the ceiling molding in the grocery store remained visible for at least seven months. Stick marks are neat in appearance, but, if desired, may be easily removed from all surfaces by gently wiping them with a damp cloth.

The sticks may be colored to make the deposits less conspicuous. The addition of colored or distasteful substances in or on the sticks may serve to warn the user that they are not innocuous.

By use of crayons maximum results are obtained with minimum ex-

penditure of material—a particularly attractive feature at present.

The tendency of the crayon treatment to cause roaches to drop from overhead or wander into new surroundings is not peculiar to the use of crayons, but would result from any thorough application of NaF.

#### Summary

Wet sodium fluoride can be molded and dried in the form of sticks or crayons which will mark most surfaces like chalk. Such marks or lines applied on infested surfaces will control the German cockroach. Practical applications in a roach-infested restaurant kitchen, a grocery store, and an apartment proved to be effective, safe, convenient, and economical,—a distinct improvement over prevailing methods of application. ★★

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any consistent advantage of starches and dextrines over pyrophyllite as a diluent. The starches and dextrines of small particle sizes adhered well to the roaches and to objects on which they were applied, but did not flow uniformly when used at a high concentration. A mixture, which was considered satisfactory from the standpoint of flowing and adhesion, contained 25 per cent of one of these materials. Pyrophyllite was an excellent diluent, as it dusted and adhered well.

#### Summary

Sodium fluoride and pyrethrum powder are excellent insecticides for the control of roaches and only one material, 2, 4-dinitroanisole, has been found to equal them in effectiveness. A fluffy, finely-ground sodium silicofluoride can be used as a substitute for sodium fluoride, but must be applied at a strength stronger than that necessary for the fluoride. The

particles size of sodium fluoride and silicofluoride was an important factor in the mortality of dusted roaches, for as a rule materials of the smaller particle size gave a better kill. A light, finely-ground grade of sodium silicofluoride diluted with equal parts of pyrophyllite should give effective control of German roaches under natural conditions.

A finely powdered grade of boric acid gave a fair kill of roaches in 96 hours and was much better than borax. Results with boric acid were much slower than sodium fluoride, although the addition of powdered sugar increased the percentage of kill somewhat. A mixture containing 50 per cent boric acid of the impalpable grade, 20 per cent pyrethrum powder and 30 per cent pyrophyllite, should give excellent results on roaches in locations where sodium fluoride or silicofluoride cannot be used.

Of the new materials tested 2, 4-dinitroanisole gave the most promising results. At all dilutions, even as low as 10 per cent, this chemical killed a higher per cent of German roaches than did sodium fluoride. Further tests of this material in a finely ground form under conditions of normal infestations in buildings are being conducted.

Present supplies of sodium fluoride and pyrethrum powder now released for roach control can be made to go further by reducing the recommended strengths of the insecticides in the mixture and by the use of good diluents. Good results were obtained with mixtures containing as little as 25% sodium fluoride and 15 to 20% pyrethrum. Pyrophyllite, starch and acid type dextrine were excellent diluents when finely ground. ★★

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## ROACH CONTROL

(From Page 93)

stances, but only two, Hoosier starch and dextrine M 4791, were better than the same mixture with pyrophyllite. In mixtures containing 25 per cent sodium fluoride, pyrophyllite showed up better as a diluent than any of the others, while Hoosier starch was second. These same materials used as diluents for 2,4-dinitroanisole showed considerable variation in their effectiveness, with pyrophyllite again the best. In mixtures with diphenylene oxide, No. 1M Crescent starch produced the highest mortality, followed by dextrines M-4320 and CW-990. In another series of tests not listed in table 5, dextrine M-4791 used as a diluent for sodium fluoride and for pyrethrum was better than mixtures of pyrophyllite and each of these insecticides.

The results given above and those listed in table 5 fail to show



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The apparatus developed by the Bureau is a pendulum-type machine which sweeps a leather or rubber heel over the surface to be tested. The floor specimen test sample is held

with its surface at a fixed relationship to the mechanical heel which forms the lower end of the pendulum, and the swinging pendulum is so set up that the contact is between the edge of the heel and the test surface, duplicating as closely as possible the actual conditions created in walking over a floor. A pointer attached to the framework gives a numerical reading in terms of an antislip coefficient for the material being tested.

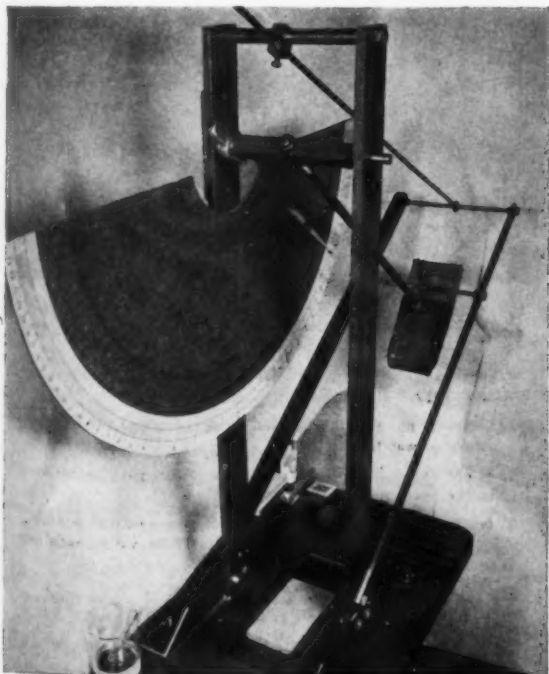
An extensive series of tests has been conducted at the Bureau, using this new device. They indicate that it gives results which are reproducible within reasonable limits, and which reflect actual results under conditions

of use. Various surfaces were tested when dry and clean, dry and dirty, wet and clean, wet and dirty, wet and soapy, and oily. Extensive tests were also made to check the effect of application of different wax finishes on floors, as well as the incorporation of various abrasive materials in different floor surfaces. Some of the specific results of the Bureau's preliminary tests are summarized below.

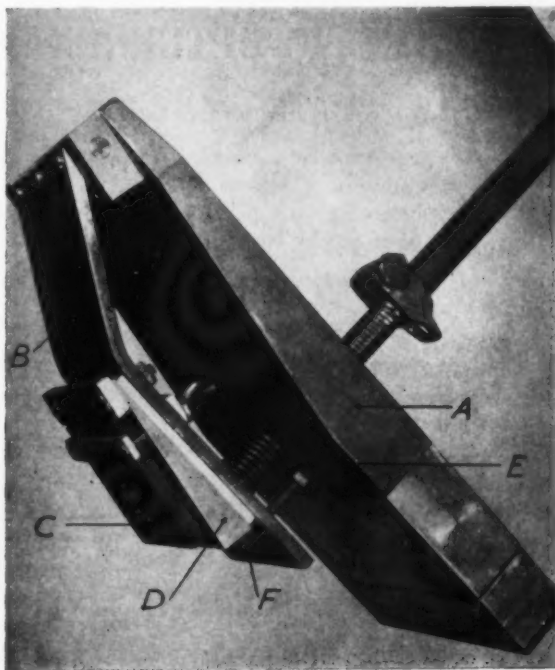
Most all floor surfaces received good ratings under dry conditions, the principal exceptions being waxed specimens of maple, oak and linoleum. However under wet conditions many showed up poorly. The following

(Turn to Page 121)

*New Slip Testing Apparatus*



*Detail of Pendulum*



# Reilly CRESYLIC ACIDS

Reilly produces the entire range of  
Cresylic Acids—in standard grades  
or to buyers' specifications.



## ... and other COAL TAR PRODUCTS *For the Soap and Disinfectant Industry*

★ **NAPHTHALENE**—Crude and refined prime white Naphthalene, in chipped, crystal, flake and powdered form. In 250-lb. barrels and 50-lb. fiber drums.

★ **TAR ACID OILS**—in all grades, from 10% to 75% tar acid content, or of specified phenol coefficient, carefully blended. In 55-gal. drums and tank cars from Chicago and Newark.

★ **CRESOLS**—U. S. P., Meta Para, Ortho and special fractions—to all specifications. In drums or tank car quantities from Indianapolis and Newark.

★ **XYLENOLS**—Low boiling, high boiling and symmetrical Xylenols—in tank cars and drums from Indianapolis and Newark.

**REILLY TAR & CHEMICAL CORPORATION**  
MERCHANTS BANK BLDG., INDIANAPOLIS, IND.  
500 Fifth Ave., New York, N. Y.  
2513 S. Damen Ave., Chicago, Ill.

**17 PLANTS To Serve the Nation**

## "Philcosol" SYNTHETIC DETERGENT

in dry form

Spot Stocks Now Available.  
It will pay you to investigate  
if you are a potential user.  
Send for Testing Sample.

**PHILLIPS SALES CO.**

122 Christopher St.

Montclair, N. J.

Phone: Montclair 3-1930



**Play Safe**—sell or recommend the 4 in 1 wherever your products are used.

- Used and approved by floor maintenance experts since July, 1939.
- Requires no metal whatever, thus assuring an unlimited supply in war time.
- A quality applicator backed by our many years' experience in the industry.
- Every square inch of the premium quality wool pad is usable. The 4 in 1 offers the best insurance that floor waxes, seals and other floor finishes are applied properly.

**AMERICAN STANDARD MFG. CO.**  
2509-13 S. Green St. Chicago, Ill.

# NEWS

## PCOs to Meet Oct. 25-27

Members of the National Pest Control Association will meet at the Hotel Statler, St. Louis, October 25, 26 and 27, in a three-day War Emergency Meeting. Current problems confronting the industry under conditions of wartime operation will feature the meeting program. Availability of essential supplies, substitutes for materials no longer obtainable, priorities, manpower problems, etc. will highlight the program. A number of speakers representing the government, the Armed Forces, raw material suppliers, etc. will be present. Morton S. Prescott, Chicago, is serving as chairman of the National Convention Committee, with Thomas C. Raley heading the St. Louis Committee in charge of local preparation for the meeting.

## Bevernick Lieut. Commander

Richard Bevernick, for several years in charge of the Insecticide Department of R. J. Prentiss & Co., New York, prior to going back into active service in the U. S. Navy in September, 1940, was promoted July 1 to the grade of Lieutenant-Commander. He is a graduate of Annapolis and was formerly an officer in the regular Navy. He is the son of A. W. Bevernick, western manager of R. J. Prentiss & Co., whose headquarters are at 9 So. Clinton St., Chicago.

## New Roach Powder Tragedy

Roach powder, used by mistake in preparing a dish of spaghetti, caused the death of a man and his wife in Chicago July 19 and left an 8-year-old boy in a critical condition.

## Penick Chicago Man Retires

Carl M. Black, for twenty years special Chicago representative of S. B. Penick & Co., New York drug firm, recently retired. S. B. Penick, Sr., chairman of the board of

the company, presented Mr. Black with an inscribed silver bowl at a dinner in his honor at the Drake Hotel,



CARL M. BLACK

Chicago, recently. Mr. Black plans to devote his efforts to farming.

## Sales Rise for L & F

A 100 per cent rise in sales for Lehn & Fink Products Corp., Bloomfield, N. J., for 1943 to date as compared with 1942 is reported in the July 16 issue of *Printers' Ink*. Magazine advertising for Lehn & Fink's "Pebeco" tooth paste has recently been resumed after a ten year lapse.

## NAIDM Advises "Vigilance"

Counseling "vigilance," particularly in the matter of restrictive state legislation, a recent bulletin of the National Association of Insecticide and Disinfectant Manufacturers by C. L. Fardwell, chairman of the NAIDM legislative committee, further commends members to study conservation orders and be informed on legislation affecting their business. By being informed and through cooperative action, Mr. Fardwell points out, "We have been successful in many instances in keeping household insecticides from

coming under license fees in a number of states in the last few years. During its legislative session this year, Texas enacted an insecticide and fungicide law that would have included household products if we had not worked diligently to confine its provisions to agricultural uses." Suggesting close reading of Association bulletins to keep posted on important developments, Mr. Fardwell recommended that action by groups within states where restrictive legislation was contemplated was more effective than action from without.

## Second Son to Buettners

A second son, Theodore Charles, seven pounds thirteen ounces, was born July 11th to Helen Buettner, wife of William O. Buettner, of Buettner Pest Control Co., Brooklyn, and secretary of the National Pest Control Assn.

## O'Kane Joins Pennsylvania Salt

W. H. O'Kane, for the past six years with Rohm & Haas Co., Philadelphia, on sales promotion in the Insecticide Department, has joined the Pennsylvania Salt Manufacturing Co. of Washington, in a similar capacity, at the Tacoma, Washington, office.

## Anti-Gas Campaign for "Clorox"

The ability of "Clorox" bleach to neutralize war gases is featured in a series of advertisements to consumers currently being run by Clorox Chemical Co., Oakland, Calif. The product is an effective neutralizer for mustard and "Lewsite" gases.

## Carnauba Substitute Production Up

Avon Trading Co., New York, manufacturers of a carnauba wax substitute, called "Ceranova" wax, recently announced an increase in their production of this replacement. Used by manufacturers of no-rub liquid wax for the past few years, increased production now makes it possible for the company to offer it on a wider scale. Not under governmental restriction, no priorities are required for "Ceranova." The product is said to contain no soap, amines or other similar substances.

# REMEMBER?

10 YEARS AGO



WE DO OUR PART  
THIS FAMOUS EMBLEM  
MADE ITS APPEARANCE

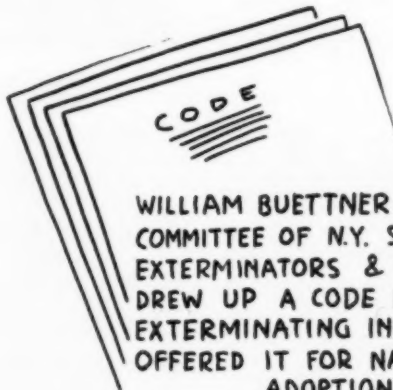
NRA DOMINATED ALL  
OTHER NEWS AS THE  
NAIDM COMMITTEE  
DREW UP A CODE.  
MEMBERS WERE:  
DR. ROBT. C. WHITE  
J. L. CLARK  
RUSSELL H. YOUNG  
WILLIAM J. ZICK  
W. L. SAVELL  
PETER DOUGAN, PRES.  
HARRY COLE, SECY.

FIRST COMMERCIAL  
DEVELOPMENT OF  
PYRETHRUM WAS  
WELL UNDER WAY IN  
KENYA—WITHIN A  
FEW YEARS TO  
ELIMINATE JAPAN AS  
SOURCE OF U.S. SUPPLY



DEODORIZED INSECTICIDE BASE  
OILS STARTED TO BECOME  
POPULAR TO REPLACE  
ORDINARY KEROSENE IN  
HOUSEHOLD INSECT SPRAYS—  
DEOBASE FIRST ADVERTISED

THE HILDEBRAND PRIZE  
OF THE CHEMICAL SOCIETY  
OF WASHINGTON WAS AWARDED  
TO U.S. DEPT. OF AGRICULTURE  
SCIENTISTS FOR DISCOVERY  
OF STRUCTURE OF ROTENONE



WILLIAM BUETTNER AND HIS  
COMMITTEE OF N.Y. SOCIETY OF  
EXTERMINATORS & FUMIGATORS  
DREW UP A CODE FOR THE  
EXTERMINATING INDUSTRY AND  
OFFERED IT FOR NATIONWIDE  
ADOPTION

THE NATIONAL ASSN.  
OF EXTERMINATORS &  
FUMIGATORS WAS INCOR-  
PORATED BY BUETTNER,  
IRVING H. JOSEPHSON,  
FRANK L. RAUCH, N.K.  
CONCANNON AND HARRY  
STUCKNER





## A.I.F.A. Meets at Spring Lake

A PLEA that the main need of the industry is for a full tentative schedule of raw materials for the coming year by the government was the keynote of the tenth annual meeting of the Agricultural Insecticide and Fungicide Association at The Essex and Sussex Hotel, Spring Lake, N. J., July 22 and 23. Discussion centered around the major raw material—arsenic—and the minor, though no less acutely short, raw material—rotenone. The supply picture for both of these important raw materials is not reassuring, nor does the immediate future hold out much prospect of relief as far as can be seen. Both are contingent on the conduct of the war to a greater or lesser extent as to their availability. The point which the Association is trying to get across—and which was adopted in the form of a resolution as part of a seven-point program is: "Where critical materials are under allocation, a tentative year's schedule should be laid out in advance by quarters and the complete estimates should be made available to the industry. If the figures for a year are not available, then the best possible estimates should be furnished with current figures as they develop."

Government officials from the war agencies and departments expressed their willingness to cooperate wherever possible in the matter of supplies, but recounted the difficulties facing them under present conditions. Covering the 1944 raw material outlook were: Warren H. Moyer, Chief, Insecticides and Fungicides Unit, Chemicals Division, WPB; C. J. Gran, Acting Head, Fertilizer and Insecticide Section, Office of Price Administration; J. A. R. Dalley, Chief, Chemicals and Health Supplies Division, Operations Branch—Office of Exports, Office of Economic Warfare; Philip H. Groggins, Chief, Chemicals Division, Food Production Administration; and George L. Lilley, assistant to Mr. J. A. R. Dalley of OPA.

The keynote address, "Protect Food For Freedom," was delivered by Dr. William H. Martin, Dean of the New Jersey College of Agriculture, and Director of the State Agricultural Station. He advised that new materials, new machinery and new markets should not be overlooked and said that study should be given to the relationship between chemical strength and toxicity.

Visiting entomologist and pathologists who spoke at the meeting included: Dr. C. O. Eddy of Louisiana Agricultural Experiment Station; Dr. H. C. Young, Chief, Department of Botany, Ohio Agricultural Experiment Station; Dr. Wm. H. White, in charge of Truck Crop Insect Investigations, U. S. Dept. of Agriculture; and Dr. R. W. Harned, in charge of Cotton Insect Investigations for the U. S. Dept. of Agriculture.

### Ardee Seeks New Lines

Ardee Maintenance Co., Portland, Oregon, which was established about a year ago by R. D. Spellman and George L. Sells, both of whom were formerly associated for several years with H. V. Smith & Co., St. Paul, Minn., seeks new lines to represent in that territory, particularly at the moment firms specializing in rat exterminating products. The firm is engaged in a combination sanitary maintenance business, including general exterminating, rug cleaning, and contract rat control for shipyards on the West Coast.

### Fire at General Drug

A fire, whose origin was traced to a pile of rubbish on the third floor of the three story building occupied by General Drug Co., Brooklyn, temporarily interrupted operations of the company on July 21. According to an official of the company, the fire was brought under control within a half-hour, and the slight damage that

was caused came as a result of water leaking through to two floors below, also occupied by General Drug. As soon as the blaze was extinguished production resumed a normal schedule.

### W. E. Byer Dies at 57

William E. Byer, 57, secretary-treasurer, Standard Sanitary Specialties Co., Jersey City, N. J., died late last month at his home in Maplewood, N. J., of a heart attack.

### Protest Louse Powder Story

Stating that the original louse powder used by the American Army was found satisfactory and that its use was abandoned by the Army as a means to conserve a critical material, pyrethrum, which it contained, Colonel R. Earnest Dupuy, G.S.C., Chief, News Division, Bureau of Public Relations of the War Department, has filed a protest against an article which was published in the July issue of *Soap & Sanitary Chemicals*. His letter to the editor, stated in part as follows:

"In the July issue of *Soap & Sanitary Chemicals* there appeared on page 101 an article entitled 'Army Louse Powder and Other Insecticidal Possibilities of Diphenyl Trichloroethane from Which It Is Being Manufactured.' In the body of the article, I understand, the following statement is made: 'Production of the new louse powder for the Army and Navy based on diphenyl trichloroethane is reported well under way to replace the type of powder previously used, some eight or ten million two-ounce cans of which were purchased by the Army before the product was found to be of little value for the control of body lice under tropical conditions.'

"I am informed by the Office of the Surgeon General, which is charged with the research and development of such items, and by the Office of the Quartermaster General, which is charged with their procurement and distribution, that the above quoted statement is in error. The powder originally used contained pyrethrum, which is used in malarial-control products. A critical shortage of pyrethrum made the development of a new formula necessary. The original formula, containing pyrethrum, rendered satisfactory performance under tropical as well as other conditions.

"Inasmuch as the above quoted statement is a reflection, however unintentional, on the Office of the Surgeon General and the Office of the Quartermaster General, it would be appreciated if an explanatory note, setting forth the above explanation of the change in formula, were run in a forthcoming issue of *Soap & Sanitary Chemicals*."

### Study Fluoride Antidotes

Entomologists at the Tennessee Agricultural Experiment Station, Knoxville, Tenn., have been making a study of materials which might be mixed with sodium fluoride to serve as an antidote, in case this common constituent of roach powder is mistakenly used for baking powder or soda.

"The fluoborates are among the many interesting chemicals tested," says a progress report included in the Experimental Station's 54th annual report. Sodium fluoborate, it continues, "contains about 70 per cent soluble fluorine, yet in the powdered form was found to be non-toxic to both insects and rats. It appears that in the  $\text{NaBF}_4$ , the  $\text{BF}_4$  ion is but slightly dissociated and does not liberate enough fluorine ions to be toxic. When dissolved in water and allowed to stand for several weeks, the solution undergoes hydrolysis, liberating toxic fluorine ions."

In feeding experiments with rats the report says, the following substances were tested as antidotes: calcium lactate, calcium phosphate, magnesium hydroxide, calcium hydroxide, calcium carbonate, bone meal, boric acid, borax, aluminum sulfate, activated alumina, bauxite clay and aluminum powder.

"The best results were obtained with aluminum sulfate," states the report. "Lime and boric acid were also of value. The aluminum forms cryolite, which in previous work was found to be much less toxic than sodium fluoride." The study was made by S. Marcovitch and W. W. Stanley.

### New Rotenone Order

A new order by the War Food Administration (FPO-13) covering use of rotenone, was issued last month to take the place of the former WPB order M-133. The approved uses of rotenone insecticides are unchanged from the previous order, use being restricted to output of the most essential foods. The order continues to exempt rotenone insecticides in quantities of one pound or less, or one pint or less.

### MOTH PRODUCTS

With retail sales running well over the 25-million-dollar-a-year mark and volume still growing, the field for moth products arouses more and more attention. SOAP AND SANITARY CHEMICALS will present a complete review of the moth products market in an article scheduled to appear in the near future.

### New England Blacking Moves

New England Blacking Co., manufacturer of shoe and leather finishes and dressings, has moved its offices from 24 Binford Street, Boston, to 491 Main Street, Cambridge, Mass. Shipping and receiving facilities are at 50 Harvard Street, Cambridge.

### New Container for "Fly-Ded"

Midway Chemical Co. is now packaging its widely sold "Fly-Ded" insect spray in a metal saving glass container. The can lithography has been transferred to the label with great success and the new package has excellent shelf appeal. The red coated metal screw caps are manufactured by The Aridor Company of Chicago.



### Open New Coal Tar Plant

Interlake Chemical Corp., has started production in a Chicago plant of heavy chemicals derived from coke oven byproducts. The new concern is a wholly-owned subsidiary of Interlake Iron Corp., Chicago, and Great Lakes Steel Corp., Detroit. The three-year-old tar distillation plant of Interlake Iron at 108th street and the Calumet river, Chicago, has been purchased and a tar and naphthalene plant now under construction at the same location will also be operated by the new company. Products already being recovered include creosote oil, carbolic oil, heavy oils and pitch. Operations are to be immediately expanded, according to announcement by J. A. Mitchell, vice-president, to break down naphthalene and tar acids into phenol, orthocresol, meta-paracresols, xylenols and other chemicals.

### Insecticides at Seed Show

Insecticides for victory gardens were featured by Acme White Lead & Color Works, Detroit, in a display of products at the American Seed Trade Association's war conference in Chicago, June 28 to 30. To assist amateur farmers the company has compiled spraying and dusting guides for vegetables, fruits, shade trees, flowers, shrubs and evergreens. Injuries or diseases of plant life are described and the insect or other responsible cause is named, with directions for treatment with the appropriate Acme insecticide or fungicide. James R. Hile from Detroit, and Paul H. Kelly, Minneapolis manager, were on hand for demonstrations.

American Cyanamid & Chemical Corp's insecticide division was represented by B. C. Culver, central states manager, Park Ridge, Ill., who had arranged a display which emphasized "Cyanogas" for control of insect and rodent pests.

Sudbury Labs., So. Sudbury, Mass., showed two animal repellants, "Chaperone," to keep dogs out of victory gardens, and "Pussy Scat," to keep cats off furniture. Counter and window display material was offered to dealers taking advantage of "special deals."

### Powell Plant Wins Again

In the annual baseball game between employes of the office and plant staffs of John Powell & Co., New York, staged June 26 at the Timber Point Country Club, Great River, Long Island, the factory men vanquished the office crew for the fourth consecutive year. The score was 12 to 9 after seven hot innings. William Gavaghan was captain of the plant team and Harold Straube of the office team. G. R. Rinke umpired without receiving a scratch. The ball game was held in connection with the annual picnic of John Powell & Co. employes which was attended by 75 persons. Following the game, dinner was served at the Country Club during which prizes and favors were presented, and the company baseball cup was awarded, Captain Gavaghan accepting for the plant team.

### Issue Insecticide Manual

Oklahoma Agricultural & Mechanical College, Stillwater, Okla., has performed a valuable promotional service for the insecticide industry in preparing an "Insecticide Manual" whose purpose is "to familiarize druggists, seed dealers and others retailing insecticides with some of the more common chemical compounds used in fighting insects." Briefly discussed are various groups of insecticides such as agricultural, household, etc., and stomach poisons, contact poisons, fumigants and repellants are also explained. Of chief value to the dealer, however, are the several tables and indexes, which indicate what insecticide to employ for control of specified pests. The formula for its compounding is supplied, with brief "do's" or "don'ts" covering application of the insecticide.

### Amer. Home Moves Traffic Office

The General Traffic Office of American Home Products Corp. has recently been moved from Jersey City to 22 East 40th St., New York. The main offices of a number of American Home subsidiaries have also been moved recently to the 40th Street building. George O. Griffith, general traffic manager of the company, is in charge of this office which has general su-

pervision over the transportation of raw materials and the distribution of more than 5,000 products manufactured and sold by the various subsidiary companies.

### Introduce New Disinfectant

A new disinfectant, sold under the trade name "Perm-Astic-Ramplex," has recently been developed by Rampel Chemical Co., New York. The product is said to curb germ growth with high effectiveness under a wide variety of conditions. It has no odor, taste or color, and is nontoxic in the concentrations in which it is made available for use in various applications. It is soluble in water, as well as in a number of organic solvents.

### Belvidere Adds New Polish

Belvidere Labs. Inc., Belvidere, Ill., has a new cleansing polish on the market, for use in institutions and industrial plants. It is described as a creamy paste, non-inflammable, non-explosive and non-poisonous, and suitable for surgical instruments and sterilizers as readily as for stoves, refrigerators, plumbing fixtures, marble, tile, mirrors, windows, etc.

### Restrict Glass Containers

Restrictions on the number of new glass containers which many buyers in the soap and sanitary chemical field may buy or have manufactured for them are included in WPB Order L-103-b, which went into effect July 1. The new restrictions, which apply to manufacturers of hand soap, cleaners and a long list of chemical specialties, limit the user for the four months period beginning July 1, to 80% of the number of glass containers and metal cans which he received either during the corresponding four months of 1942, or in one-third of the full calendar year, 1942. After a choice is made as to method of determining a user's quota, it cannot be changed without WPB approval.

The purpose of the restriction is to guarantee sufficient supplies of glass containers to packagers of food, drugs, etc. Packagers of beverages received a quota of only 65% as com-

### Canada Insecticide Error

Flea powders, louse powders and similar insecticides sold in Canada are not restricted to the use of pyrethrum or rotenone as active ingredients. Correcting a report which appeared in the June issue of *Soap & Sanitary Chemicals*, A. M. W. Carter, Director of Pesticides, Wartime Prices and Trade Board, Ottawa, makes the following statement:

"In *Soap* for June, a statement is made which is inaccurate. It says that, 'In Canada only flea powders, animal louse powders and certain other similar insecticides which contain pyrethrum or rotenone may be termed insecticides and sold as such.' Any product which contains a satisfactory amount of killing ingredients may be described as an insecticide and sold as such in Canada provided it is registered under the Pest Control Products Act."

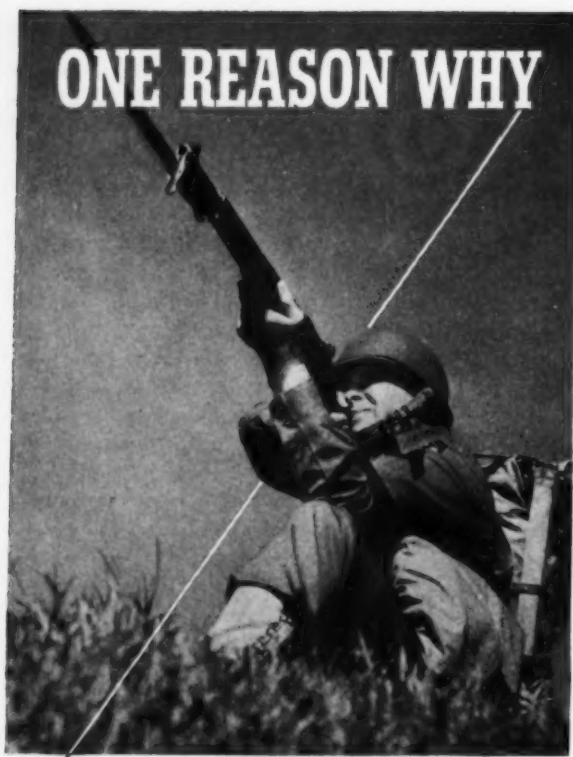
### Serve on NAIDM Committee

Dr. G. A. Bowden of A. S. Boyle Co., Jersey City, and A. E. Zittel, Jr., Shell Oil Co., New York, have just been added to the personnel of the Sanitary Specialties Scientific Committee of the N.A.I.D.M.

pared with the 80% granted to packagers of chemical, household and industrial supplies.

A provision of the order which will benefit the small user allows any buyer to accept a minimum quota of \$1,000 worth of containers, regardless of 1942 purchases. Another important provision which must be taken into consideration is the stipulation that no user may accept delivery of more one-half gallon or larger containers for packing any class of product than he accepted during the period July 1, 1942 to October 31, 1942; or one-third of the number he accepted during the full year, 1942. In addition the total capacity of new glass containers accepted by a user for packing any product may not exceed 140% of the total capacity of containers accepted for that product in his base period. Capacity is to be computed in pounds or gallons, whichever is customary for the particular product.





## deliveries of NAPHTHALENE may be curtailed . . .

Naphthalene, long recognized as one of the most dependable moth preventives known, is also used in the manufacture of plasticizers for smokeless powder. Like many another coal-tar chemical, for which Barrett is a key source of supply, it is needed in ever-increasing quantities for war purposes.

All Barrett's vast facilities and 89 years of manufacturing experience are being utilized to keep production of these vital chemicals at top limits. But so great are war requirements, we ask the indulgence of our customers if deliveries for civilian use are curtailed or delayed.

PHENOLS  
CRESOLS  
CRESYLIC ACIDS  
CHLORINATED TAR ACIDS  
BARRETAN®  
PICKLING INHIBITORS  
BENZOL  
TOLUOL  
XYLOL  
SOLVENT NAPHTHA  
HI-FLASH SOLVENT  
NAPHTHALENE  
PHTHALIC ANHYDRIDE  
DIBUTYL PHTHALATE

PYRIDINES  
TAR ACID OILS  
CREOSOTE OIL  
CUMAR®  
(Paracoumarone-Indene Resin)  
RUBBER COMPOUNDING  
MATERIALS  
BARDOL®  
HYDROGENATED COAL-TAR  
CHEMICALS  
FLOTATION AGENTS  
ANHYDROUS AMMONIA  
SULPHATE OF AMMONIA  
ARCADIAN® THE AMERICAN  
NITRATE OF SODA

®Trade-mark Reg. U. S. Pat. Off.



Awarded to the men and women of the Barrett Frankford Chemicals plant for excellence in the production of war materials.

**THE BARRETT DIVISION**  
ALLIED CHEMICAL & DYE CORPORATION  
40 RECTOR STREET, NEW YORK

ONE OF AMERICA'S GREAT BASIC BUSINESSES



THE MARK OF QUALITY

PALE WOOD

# ROSINS

They will help  
the soapmaker  
"stretch" his fats.

**CROSBY NAVAL STORES, INC.**  
PICAYUNE, MISSISSIPPI

# SOPAC

**SAFETY HAND SOAP**

(Powdered)

A money-maker for alert jobbers calling on industrial plants and institutions.

- ★ Hygienically safe—fast and economical
- ★ Non-abrasive, vegetable oil base
- ★ Soothing with fine after-effect
- ★ Tested and approved by millions of safe washups in plants throughout the country
- ★ Unsurpassed quality and value
- ★ Free samples available for established jobbers

Other items in the Skotch Products line include dish-washing compounds, medium and heavy duty cleaners, liquid soap concentrate, special formula compounds and powdered soap dispensers.

**SKOTCH PRODUCTS CORP.**

1220 W. SIXTH ST.

CLEVELAND, OHIO



# Insecticides at Chick Show

**C**APITALIZING on the sanitation angle of the nation's vast poultry production program, several manufacturers of sanitary chemicals participated in the "On To Victory" conference of the International Baby Chick Association in Chicago, July 20 to 22.

Pennsylvania Salt Co., Philadelphia, featured "Kryocide," a fluorine insecticide, in dust and spray form, made from cryolite. A spraying and dusting chart, distributed with the product, explained its use for combating insect pests of field and orchard as well as farm poultry. Also shown were "B-K" chlorine disinfecting and deodorizing powder, and "B-K" general soapless cleaner for washing poultry house equipment. S. H. Crounse, general sales manager, from Philadelphia, was on hand to assist G. S. Cole, Illinois sales manager, at the booth.

Hilltop Laboratories, Minneapolis, promoted "Hilltop" hydrochlorite solution, and "Pure-nur," a disinfectant for washing water fountains, feeder troughs and other utensils in the coops. Fred H. Moore, proprietor, in charge.

I. D. Russell Co., Kansas City, Mo., had displays of "San-phe-nol," a disinfectant spray, "Revenge" roost paints, lice destroyer and litter sprays, along with biologicals and other products for control of poultry pests and diseases. I. D. Russell, company president, was in charge, assisted by Mrs. Alvana Bernard and other sales representatives.

Mathieson Alkali Works, New York, presented a large display of "HTH 15," a chlorine bactericide, germicide, deodorant, disinfectant and stain remover. A. E. Wennerstrom, manager of the HTH 15 products division, was assisted by A. G. King and J. K. Moorhead, Chicago. Watt McCain, Charleston, S. C., and M. L. Duggan, Atlanta.

Tobacco By-Products & Chemical Corp., Louisville, stressed "Black Leaf 40" for lice control on roosts, also "Black Leaf 155" for use in apple

orchards, and other products. R. A. Biron, field representative in charge.

Dr. Salsbury's Laboratories, Charles City, Ia., promoted "Par-O-San," an insecticide and disinfectant, together with medical preparations for poultry diseases. Martin B. Potratz, sales manager in charge.

Pratt Food Co., Philadelphia, offered a roost paint and a dry insecticide for poultry and hog house use and a liquid disinfectant for cows and horses. W. L. Hall, sales manager from the Hammond, Ind., plant, had charge.

## Amer. Home Products Earnings

With a sales increase of 39 per cent in the first six months of 1943, American Home Products Corp., announced profits before taxes as 53 per cent higher than in the same period of 1942, and net earnings after taxes showed a gain of 9 per cent. Consolidated profits of the corporation and its subsidiaries; manufacturers of drugs, foods and household products; for the period ending June 30, 1943, after deducting depreciation, interest and other charges, but before provision for income and excess profits taxes, amounted to \$7,174,257.78, compared to \$4,667,659.47 in the same period of 1942. After provision for foreign income and excess profits taxes and Federal income and excess

profits taxes estimated under the Revenue Act of 1942, net profit amounted to \$2,220,797.85, equivalent to \$2.46 per share on the average number of shares (903,157) outstanding during the period. This compares with \$2,036,477.06 or \$2.39 a share during the same period of 1942.

## FLOOR SLIPPERINESS

(From Page 113)

floor and deck materials showed very good antislip characteristics after grinding with No. 180 silicon carbide: sandstone, cement mortar, magnesite tile containing a coarse abrasive, ceramic tile containing 80 per cent abrasive, and abrasive cloths. Original surfaces which were outstanding included: four-cut granite, split sandstone, aluminum with an abrasive imbedded in the surface, and abrasive cloths.

The antislip properties of maple, oak, rubber, linoleum and asphalt tile were, under most conditions, increased by grinding the original surfaces and were subsequently found to have been lowered by coating the surfaces with finishing materials. The results of tests on waxed floors indicated that water-emulsion wax has better antislip properties than either paste or spirit waxes. The results showed further that waxed floors are more hazardous, especially under dry conditions, with leather heels than with rubber heels.

Tests to determine the effectiveness of the addition of abrasives to flooring materials showed that the antislip properties of terrazzo were improved by such additions. Results obtained on ground specimens of flooring materials were not materially altered by difference in amounts and types of abrasives. Several specimens of terrazzo containing different amounts of an acid-resisting abrasive were etched with hydrochloric acid prior to buffing, to cause the harder abrasive aggregates to protrude prominently in the surface of the terrazzo. The antislip coefficients of specimens tested, under wet conditions and with leather heels, were said to be materially increased by such treatment.

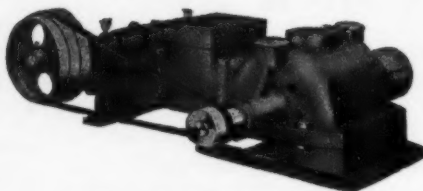
## COCKROACHES AND THEIR CONTROL

Continuing our coverage of the important problem of cockroach control.—**SOAP AND SANITARY CHEMICALS** will present a practical article on the subject in our September issue by Dr. M. H. Doner and Dr. E. G. Thomssen. Effective use of traps, liquid insecticides, pyrethrum and sodium fluoride, crack fillers, phosphorus pastes for the practical operator will be discussed at length. A useful key for identification of common American species is also included.

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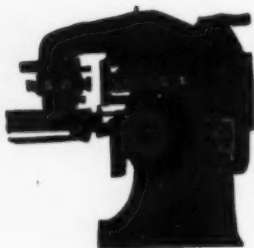
Newman's BRAND NEW  
Steel Steam Jacketed  
SOAP CRUTCHERS  
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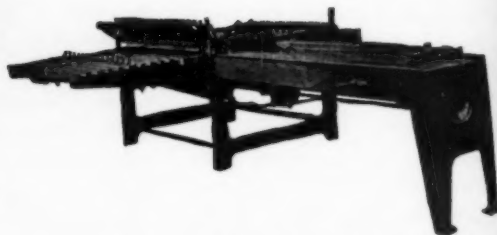
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2 Automatic Power Soap Cutting Tables.

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THESE SPECIAL  
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bers.

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**Classified Advertising** — All classified advertisements will be charged for at the rate of ten cents per word, \$2.00 minimum, except those of individuals seeking employment where the rate is five cents per word, \$1.00 minimum. Address all replies to Classified Advertisements with Box Number, care of *Soap & Sanitary Chemicals*, 254 West 31st St., New York.

## Positions Wanted

**Chemical Engineer** — Capable executive, experienced in supervising and operating plant, manufacturing soaps, disinfectants, waxes, polishes, emulsions, insecticides, etc. to Federal, Army, Navy, commercial specifications, etc. Draft classification 3A(H). Employed at present time. Address Box No. 564, care *Soap & Sanitary Chemicals*.

**Soapmaker and Chemist**—Man with ten years experience abroad and in U. S. in manufacture soaps, detergents, soap powders, etc. Just classified 4-F. Best record and references. Desires new position with progressive soap firm, preferably in mid-west. Immediately available. Box No. 562, care *Soap & Sanitary Chemicals*.

**Soap Representative** — Young man with several years experience in New England as sales representative for manufacturer of sanitary chemicals, soaps, etc. desires to make new connection with larger and more progressive firm. Fine record, good following among industrial establishments, best references. For further details, write to Box No. 571 care *Soap & Sanitary Chemicals*.

**Soapmaker and Chemist** wants position. Anything in the soap line. Address Box No. 573, care *Soap & Sanitary Chemicals*.

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**Insecticide Salesmen** with previous exp. selling Pyrethrum and Rotenone Insecticides. Chicago District manufacturer of popular and effective line of Pyrethrum, Rotenone and Synthetic Insecticides used by growers of field crops and Greenhouses, has excellent opp. for two good men. Give age, exp. in full detail, territory covered, minimum drawing account against salary and commission, plus reasonable traveling expenses. Address Box No. 569, care *Soap & Sanitary Chemicals*.



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- 1—Broughton 1500# Mixer.
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## “Good” Disinfectants

Pine Oil Disinfectants Coefs. 3 and 4

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Soluble Cresylic Disinfectants  
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Liquid Soaps

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Floor Wax and Polishes

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Manufacturing Chemists—Since 1868

2112 E. SUSQUEHANNA AVE.

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**Salesman wanted** — Established progressive southern manufacturer of disinfectants, insecticides, soaps, and kindred products has openings to replace 3 salesmen in the Armed forces. Liberal drawing account against commissions (50% of basic cost price arrangement) (for experienced disinfectant salesmen only) with car, draft deferred, and must have some following amongst institutions, schools, hospitals, war plants, industrials, hotels, and office buildings, etc. Part of Illinois, West Virginia, Indiana, and Kentucky open, also some southern and southwestern territory. If you are not making big money now, write fully your qualifications. We are serving numerous Government accounts and have ample materials and containers to supply more. Replies confidential. Write Box No. 570, care *Soap & Sanitary Chemicals*.

**Chemist** — Man wanted by insecticide manufacturer with experience in insecticide chemistry. Good opportunity, permanent position with old, well-known firm in mid-west. Give details experience, education, salary, etc. Box No. 567, care *Soap & Sanitary Chemicals*.

**Wanted** — General manager by leading manufacturer of insecticides, polishes, sanitation specialties. Handle and direct sales policies, salesmen, establish sales territories. Must know field and markets. Salary plus bonus. Located eastern seaboard. Give full facts in letter to Box 568, care *Soap & Sanitary Chemicals*.

**Assistant Manager** to direct sales, production and office and assume active management after training period so that owner-manager may retire. War and post war industry and may consider eventually accepting investment by the right party. Strictly confidential. State salary desired, history, religion, qualifications, draft and marital status. West coast. Address Box No. 566, care *Soap & Sanitary Chemicals*.

**Wanted Sales Promotion Man** — Progressive manufacturer of sanitary products in the New York district is interested in adding as a permanent member of his organization the services of an experienced and productive sales promotion man to assist sales manager in building up business. Prefer man in the 30-40 age bracket. Write giving full details as to experience and salary desired. Box No. 561, care *Soap & Sanitary Chemicals*.

**Soapmaker and Superintendent** experienced in all lines of industrial soaps wanted for medium sized soap factory on the West Coast. Please give background and salary expected to Box No. 576, care *Soap & Sanitary Chemicals*.

## Miscellaneous

**Floor Brushes** — We manufacture a very complete line. Catalogue sent upon request. Flour City Brush Company, Minneapolis, Minn., or Pacific Coast Brush Co., Los Angeles, Calif.

**Will Purchase Immediately** — Pneumatic Packaging Machine, used for chips, powder, cleanser; also dry mixers, chip dryers, crutchers, and automatic soap press. Address Box No. 572, care *Soap & Sanitary Chemicals*.

**For Sale:** 2—Jones Automatic Presses; 2—Package Machinery Co. Wrappers; 2—H. A. 4 Roll Granite Soap Mills; 4—Empire State Foot Presses; 1,500 lb. Dopp Crutcher; Power Mixers, 100 to 2,000 lb.; Powder Mills; Cutting Tables; Slabbers; Soap Kettles, 50 to 5,000 gals.; Fillers; Labelers; Pumps; Tanks, etc. Send for bulletins. Cash buyers of your surplus equipment. Brill Equipment Company, 183 Varick Street, New York, 14, N. Y.

**Manufacturer wants** used auger type powder filling machine. State price. Address Box No. 565, care *Soap & Sanitary Chemicals*.

**For Sale:** Proctor 5 Fan, 3 Apron Conveyor Soap Chip Dryer, 2—5 Roll water cooled inclined steel roller mills, 16" dia. x 40" face; Foot Presses; 600 and 1,500 lb. Soap Frames; Cutting Tables; Plodders; 12 x 30 and 16 x 40 Three Roll Water Cooled Steel Mills; 4 Roll Stone Mills; Dryers; Chippers; Powder Fillers; Mixers; Grinders; Filter Presses; Disc Filters; Pumps, etc. Send for Soap Bulletin No. 402. We Buy Your Surplus Equipment for Cash. Stein Equipment Corp., 426 Broome Street, New York City.

**Wanted** — Established soap brand. We are interested in purchasing a going brand of toilet or medicated soap to add to our own line. Product should preferably be one on which some advertising has been done and for which there is an established market that can be built upon. Address full details in confidence to Box No. 575, care *Soap & Sanitary Chemicals*.

**New Lines Wanted** — Established Metropolitan New York jobber of cleaning supplies selling buildings, banks, etc., interested in additional lines and products. What have you to offer? Box No. 574, care *Soap & Sanitary Chemicals*.

## Sulfonated Oil with Cube

Vegetable oils when sulfonated and mixed with powdered cube or derris, were equal or superior to their respective natural oils in toxicity to plant bugs such as the squash bug and harlequin bug. The sulfonated oils are preferable because of their ready mixing with water. Against the harlequin bug all of the nine sulfonated oils tested increased significantly the toxicity of derris; sulfonated olive and soybean oils were especially effective. Addition of acetone to natural or sulfonated oil-cube mixtures increased their toxic effectiveness. Sulfonated oils are less injurious than emulsified natural oils to cucurbit and cruciferous crop plants. R. A. Fulton and N. F. Howard. *J. Econ. Entomol.* 35, 867-70.

## Peck's OIL SOAPS

DELAYS . . . In spite of war demands, raw material and other difficulties, PECK'S PRODUCTS is still doing its utmost to supply promptly the needs of its regular customers. Delays in delivery are beyond our control, and we ask our old customers to bear with us under present conditions.

PECK'S Oil Soaps and other soap specialties, disinfectants, floor waxes . . . a full line of sanitary specialties manufactured by PECK for sanitary specialists.



*Everything in Soaps, Disinfectants, Waxes, Etc.*

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Recognizing its strategic value in the control of certain insects and pests, the use of Rotenone has been restricted to the needs of the Armed Forces, the protection of a limited number of vital agricultural crops, and the control of warble fly on cattle.

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Those who need Rotenone for the specific purposes for which it is now reserved will be glad to know that we have still available supplies of **ROTENONE** and **ROTENONE RESINS** and from time to time expect to have **ROTENONE POWDERS**.

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Specialists In Rotenone Roots and Rotenone Products  
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Every effort is made to keep this index free of errors, but no responsibility is assumed for any omissions.





"You ain't even makin' a dent wid dat scatter-shot, Cuthbert. Yo'all need bullets, not buckshot!"

*... bullets, not buckshot!*

**G**OOD advertising is like a bullet. It hits the target, — and hard! Scatter-shot advertising, aimed at a half-dozen targets all at once, lacks force and seldom makes a dent. In short you can't "make a dent" trying to cover six fields by advertising in one magazine with a "scatterville" circulation.

If you want to hit the target, — and hard, — with your advertising in the field of Soap and Sanitary Chemicals — with bullets, not buckshot, — we suggest regular advertising in

**SOAP and Sanitary Chemicals**

254 WEST 31st STREET

NEW YORK 1

*Member Audit Bureau of Circulation*

## Tale Ends

**G**LYCERINE situation has eased considerably, — or rather the W.P.B. pressure to increase glycerine output seems to have eased off. Less is heard about the glycerine shortage. The reason? It seems that we are over-produced on smokeless powders, — artillery and naval operations thus far have used much less than anticipated, — and production has been cut down, meaning reduced demand for glycerine.

A half-pound can of salvaged kitchen grease was the admission fee at several ladies' day baseball games in Brooklyn last month. And did the female baseball fans flock to the Brooklyn ball park to see the battling Dodgers, alias "Dem Bums," do their stuff! With the Dodgers backing the campaign, fat salvage, — though it may stumble elsewhere, — is assured of fervid support along the banks of the Gowanus!

Insect sprays based on synthetic toxicants have heretofore been tabooed by our armed forces. Now, says the Washington grapevine, the Surgeon General's office has worked out a new specification for a wholly synthetic insect spray. How times do change!

When is O.P.A. really going to come through with those extra ration tickets for salvaged household and restaurant fats? As we see it, this is the key to the whole campaign, — the difference between success or failure. Can't an axe be used on some of the red tape?

Toilet soaps coming off the production line at present appear to be meeting general approval with the exception of a tendency toward mushiness in the soap dish. In view of changed composition, this is not surprising to soap men. Some increase in higher titre fats and hardened oils over the next six months, — we hope, — may help to correct this situation to a degree.





## UNCO SIMILE LAVENDER

**W**ITH the present shortage of natural Oil Lavender, we recommend UNCO SIMILE LAVENDER to impart a true lavender odor to fine toilet soaps . . .

1. UNCO SIMILE LAVENDER comes very close to the character of the natural oil . . .
2. UNCO SIMILE LAVENDER odor is long lasting and completely stable in soaps . . .
3. UNCO SIMILE LAVENDER will not discolor white soaps . . .
4. UNCO SIMILE LAVENDER is available at a price which is within the perfuming cost range of even the lower-priced toilet soaps.
5. UNCO SIMILE LAVENDER has met the test of long and successful practical use in toilet soaps, shampoos, shaving creams, lotions . . .

Write us for a sample . . .

**INGERER & COMPANY**  
61 Sixth Ave. New York

*Wardia*



Fresh and exhilarating as the flower itself—WARDIA—  
an entirely synthetic Rose character, is meeting the most exacting demands  
of discriminating perfumers. Used by itself or as a replacement for the  
natural Rose oil it is invaluable. A Chuit, Naeef product, ample stocks  
are available in this country—\$58.00 per pound—a trial ounce \$3.75.

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for the  
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83.7%

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